REPORTS FROM THE SCIENTIFIC EXPEDITION TO THE NORTH-WESTERN PROVINCES OF CHINA UNDER THE LEADERSHIP OF DR. SVEN HEDIN

— THE SINO-SWEDISH EXPEDITION —

PUBLICATION 7

VII. Archaeology

1

Archaeological researches in Sinkiang

by

FOLKE BERGMAN

BOKFÖRLAGS AKTIEBOLAGET THULE • STOCKHOLM

ARCHAEOLOGICAL RESEARCHES

IN

SINKIANG

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ESPECIALLY THE LOP-NOR REGION

BY

FOLKE BERGMAN

DESCRIPTIVE LISTS OF TEXTILES BY VIVI SYLWAN
APPENDICES BY STEN KONOW, AND HJALMAR LJUNGH

WITH 20 HALF TONE PLATES, 2 COLOURED PLATES,
36 COLLOTYPE PLATES, AND 52 ILLUSTRATIONS
AND MAPS IN THE TEXT

STOCKHOLM 1939

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INTRODUCTORY NOTE

About 40 years ago a happy combination of circumstances enabled me, though not an archaeologist by profession, to discover ruins of several towns, villages, fortifications and temples in Eastern Turkistan, ruins which had for many centuries, in certain cases even a couple of thousand years, remained hidden and forgotten in the desert sand. From many of these places I brought home to Sweden collections of archaeological specimens.

When in Peking at the turn of the year 1926—27 I was negotiating for permission to undertake a big expedition to Sinkiang, or Chinese Turkistan, Professor J. G. ANDERSSON suggested that also a Swedish archaeologist be added to the staff of the expedition. For this initiative I am profoundly indebted to him, for it meant not only a considerable extension of our program, but also an added significance to the expedition.

To this post, as the Swedish archaeologist of the expedition, was appointed FOLKE BERGMAN, who in this part of our Report Series gives an account of the archaeological work carried out in the province of Sinkiang. This monograph will be followed by several others dealing with the results of extensive research in Inner Mongolia.

It is for me both a duty and a pleasure to express here my warm and cordial thanks for FOLKE BERGMAN'S contribution to our scientific work in connection with the expedition.

I am also glad of this opportunity of expressing my warm feeling of gratitude to our Chinese friends for their hospitality to us over a long period of years, during which we were able to establish a Sino-Swedish co-operation that has proved of great value and importance to both parties.

By a sequence of chances beyond our control we found ourselves, in the spring of 1934, in the Lop-nor country. The Central Government in Nanking had done me the honour of entrusting me with the task of localizing and investigating two motor-roads between China proper and Sinkiang. The civil war then in progress in the province led General SHENG SHIH-TS'AI, the military Governor-General of Sinkiang, to request us, for our own safety's sake, to move down towards Lop-nor for a couple

of months. This request, which was rather in the nature of an order, fitted in very opportunely with our own desire as far as possible to complete our earlier researches in this highly interesting region. In the course of our geographical researches in the Lop-nor country during this season we found, inter alia, a number of ancient graves, which we excavated. In September, the collections from these graves had been taken without mishap to Urumchi, where they would certainly have been lost to science if the Soviet Russian Consul-General, G. A. Apresov, with the great influence he wielded in the province, had not obtained for us permission to take these finds with us on our journey eastwards. The authorities in Peking settled their final destiny by deciding that we might take them to Sweden on loan, for scientific purposes. I wish here to express my hearty thanks to those whose aid in the matter contributed so powerfully to this fortunate issue. It is the description of these collections that constitutes the central part of the present volume.

Stockholm in February 1939.

Sven Hedin.

PREFACE

It is the aim of this volume to describe the archaeological collections that have been made in the province of Sinkiang by the Swedish participants in the Sino-Swedish Expedition of Dr. SVEN HEDIN. This expedition touched Sinkiang during the years 1928—31. My own visit to the province was limited to 1928, but in 1934 I re-visited it as a member of SVEN HEDIN's highway expedition. Besides the Swedish members HEDIN, HÖRNER, NORIN, AMBOLT and myself, our Chinese colleague, Mr. PARKER C. CHEN, was an active contributor to the collections. The respective responsibility for the various sections will emerge from the text.

The collections are to be found in the Museum of Far Eastern Antiquities in Stockholm. The finds from Lop-nor that were made during the motor-car expedition of 1934 are loans and will, according to contract, be returned to the Chinese authorities. These latter finds bear the numbers 1—44 in the descriptive lists.

It was at first planned that the prehistoric material of the expedition should be published separately in series with Palaeontologia Sinica. This is, moreover, what will be done with the main part of it. There are several reasons why the prehistoric finds from Sinkiang are included in this volume, the chief being their small number. As the content of this book was already very heterogeneous it was thought suitable to include also the prehistoric material to form a kind of background to the historical finds. The arrangement has thus become consistently topographical instead of chronological.

I have made practically no mention of the circumstances and the general course of the various journeys during which these collections have been brought together. I have restricted myself to a description of finds and ancient remains. The reason for this is that Dr. HEDIN plans a comprehensive chronicle of all the members' journeys for our Report Series.

The present volume is for the most part descriptive. It makes no pretensions to completeness in what I may call the 'synthetic' parts.

I am fully aware of the many defects in this publication, above all the disproportion between the amount of the finds and the bulk of the book. This will certainly meet with criticism, but in adopting Sir AUREL STEIN's method with complete descriptive lists accompanying the text I was convinced of the great facilities his

method offers to a student who wants to go into details. For purposes of reference and from the point of view of a general survey STEIN's publications are unsurpassed, though a certain amount of repetition is of course unavoidable. That the planning of this publication is far below STEIN's standard I am the first to confess. And that in other respects my treatment of the subject has been somewhat dry and lacking in imagination is of course solely my responsibility.

In coming, now, to thank all those who have contributed to the completion of the book I must first and foremost address myself to SVEN HEDIN, without whose initiative it would never have been possible. I owe a great and deep dept of gratitude to this Nestor of Asiatic exploration in my capacity of participant in his last big expeditions in Asia. With his youthful enthusiasm, boundless optimism and profound experience he was an unfailing source of inspiration, and a sure and steady support. Impossibilities simply did not exist for him. Difficulties that seemed insuperable to us others, he overcame. Here, at home in Sweden, he has never tired of encouraging me and guiding me in my work, and has always met my faults and defects with incredible patience and forebearance.

As this book is devoted to the archaeology of Sinkiang, it is also my pleasant duty to express my homage to him as one of the first Europeans to make archaeological discoveries in this vast country, which by reason of its remoteness had been in every respect an unknown territory for Occidentals. We Swedes shall not forget that his contribution also in the region of Central Asian archaeology has been that of the pioneer, and that his researches here have priority over those of many foreigners who have since reaped laurels in his footsteps.

On my return from Asia, Professor J. G. ANDERSSON showed the greatest kindness in placing at my disposal in the Museum of Far Eastern Antiquities (Östasiatiska Samlingarna) not only working room, but also all the advantages that this institution has to offer. Before a State subvention was granted for the scientific examination of our collections he provided funds to enable me to make a start. It has been a great privilege for me in connection with the text of the section on painted ceramics to have the criticism of one with such profound knowledge of these matters as he. I am glad of this opportunity of expressing my warm gratitude to him.

Most of the work on the grave-finds from Lop-nor here described took place during Prof. ANDERSSON's last journey to China, when Professor BERNHARD KARLGREN held the position of Curator of the Museum of Far Eastern Antiquities. To him I owe many thanks for his unfailing kindness and his readiness to help me in linguistic and historical questions. I am also obliged to him for criticism of a part of the text.

My former colleagues on the expeditions have all contributed in one way or another to this publication, either by collections or by good advice. Especially must I express my gratitude to NILS HÖRNER for his collections of archaeological objects

from Lop-nor, and for the readiness with which he has always helped me in questions touching hydrography and topography. It is largely thanks to him that I have been able to reproduce any maps of Lop-nor here. The same applies also to my Chinese companion and friend Mr. PARKER CHEN, who, besides, helped me with the translation of a certain part of a Chinese archaeological work. ERIK NORIN, too, has given me valuable advice concerning the maps, and has kindly carried out some petrographic analyses. To GERHARD BEXELL and DAVID HUMMEL I also owe valuable information, and the former, moreover, devoted time to determining some animal bones for me. GÖSTA MONTELL, who serves as editor of this series, has spared no pains to lessen the practical difficulties connected with the printing of the book, and has also been kind enough to criticize the text of several chapters.

One of my companions on the expeditions deserves special thanks for the constant helpfulness and good comradeship he showed in the field during the rather difficult campaign in swelteringly hot summer days in the Lop desert in 1934. I refer to GEORG SÖDERBOM. Without his aid perhaps the greater part of the newly discovered grave district would have remained unknown. He also executed a number of sketches for me, some of which I have reproduced.

During a large part of my reconnaissances in 1928 I had the good fortune to travel in company with HENNING HASLUND. His cheerfulness was always stimulating during tiresome days in the desert. I feel a warm obligation to him for the excellent way in which he facilitated my work.

Another field companion should not be forgotten in this connection. From Prof. ANDERSSON I had 'inherited' one of his archaeological 'collectors', CHIN by name, who followed me during my travels in Sinkiang in 1928. He always worked to my satisfaction and showed me a loyal affection. In 1930 he safely brought the expedition's Sinkiang collections from Urumchi through the Gobi to Peking.

I wish also to offer my cordial thanks to Miss VIVI SYLWAN, who with great enthusiasm undertook the description and preparation of all textile finds from SVEN HEDIN'S expedition, for her co-operation during the time the material was being cleaned and prepared here in Stockholm, and for all her good advice and suggestions. I am especially indebted to her for the wide knowledge she has lavished upon all the textile descriptions in the lists of antiques. Their careful accuracy makes them an invaluable addition to this publication. I hope it will not be long before Miss SYLWAN has finished her monograph on the woollen textiles from the Lop-nor graves, which volume will be followed by another dealing with the silk fabrics.

The co-operation of Mr. HJ. LJUNGH in the work of assigning various material has proved very fruitful. The result of this first co-operation has taken the form of an appendix added to this volume. His careful examinations have considerably enhanced the value of the chapters concerning the Lop-nor graves, and I am much indepted to him for his energetic work in throwing light on these important questions.

For the second appendix I have to thank Professor STEN KONOW in Oslo. This

eminent authority on Indian philology very kindly placed his great knowledge at my disposal to settle the questions relating to a strip of silk with Kharoshthi script.

My thanks are also due to Professor HELMER SMITH of Upsala, Mr. W. A. UNKRIG of Frankfurt-am-Main and Dr. KAARE GRÖNBECH of Copenhagen for their kindness in assisting me with the reading of some Tibetan and Mongolian characters.

Dr. GUNNAR JARRING of Lund has controlled the transcription of the Turki names so as to bring them into line with international usage, and for the transcription of Mongol names I have had the privilege of utilizing Mr. UNKRIG's deep knowledge.

Professor GASTON BACKMAN of Lund has been extraordinarily obliging in examining the anthropological material from the graves. Unfortunately, his publication has been delayed by unforeseen circumstances, so I have been unable to make use of his results; but his report will probably be ready in the near future.

Dr. R. BERGENHAYN of the Invertebrate Department of the Museum of Natural History has with great thoroughness carried out microscopic determinations of shells and beads and similar articles of adornment made of shells.

To Dr. T. DU RIETZ, who subjected the prehistoric flint material to ocular examination, I am indebted for valuable hints.

Miss I. EKBERG has been of great assistance to both Miss SYLWAN and myself in the preparation of the textiles and other tasks in connection with the arranging of the collections. She is also the author of Indian ink drawings and the coloured plates in this book, and has in addition helped me with proof-reading. I have also had kind assistance with this from my wife and my sister.

The maps have been drawn at A.-B. Kartlitografen, Stockholm. Some of the photographs for the collotype plates have been taken by N. LAGERGREN; the majority by myself. For three of the photographs in the text I have Mr. CHEN to thank. The collotype plates were executed at Malmö Ljustrycksanstalt, other clichés by BERGSTRÖM's Klichéanstalt, Stockholm.

Finally, I wish to express my appreciation of the work of Mr. LEONARD B. EYRE and Mr. DONALD BURTON, who have had the probably not always easy task of correcting each a part of my English text and as far as possible getting its rough turnings to sound English.

Stockholm, February 1939.

Folke Bergman.

ABBREVIATIONS.

MFEA	Museum of Far Eastern Antiquities (Östasiatiska Samlingarna).	L.	length.
Br.	breadth.	Th.	thickness.
		W.	width.

For abbreviations referring to publications cf. the bibliography.

PART I.

PREHISTORIC FINDS FROM SINKIANG

1. EARLIER DISCOVERIES.

Very little is known about the prehistoric periods of Sinkiang. SVEN HEDIN gave us the first hint of the existence of what may be called a stone age in the Lop desert. In his collection of antiquities from 1900-01 there are two worked stones. One is a core or nucleus of agate-looking stone from one side of which flakes have been split off, the other is a flake of yellowish flint (Bergman 1935 c, Pl. IX: 2—3). Their small size is typical of the stone age objects of Eastern Turkistan and Mongolia which have been found by other explorers during the last three decades. Judging from the form nothing can be said as to the proper age of HEDIN's two objects, and they do not originate from any definite stratum but have been picked up from the wind-eroded surface of the ground.

STEIN's collection of about 450 stone artifacts from the Lop-nor region is more representative but even here we are left in uncertainty if we want to obtain any more precise chronological determination. They have been described and discussed by R. A. SMITH.

STEIN also discovered stone implements in a couple of places among the sands of Taklamakan south-east of Ckok-tagh in the neighbourhood of Maral-bashi (Stein 1928, p. 85). He found two cores, an arrow-head, a point, eight flakes and some nondescript worked stones. SMITH does not discuss them in his paper on STEIN's other prehistoric finds. That they should be palaeolithic as suggested by STEIN is not explained, and seems unlikely.

PELLIOT purchased two jade axes at Qum-tura near Kucha; they are now in the Musée de Saint Germain (Pelliot, p. 9). Through the kindness of the authorities of the Museum I have obtained photographs of these axes (which proved to be three in number). They will be discussed in connection with the Lop-nor axes.

The new material discovered during the course of SVEN HEDIN's Sino-Swedish Expedition, with the exception of the finds made by Dr. P. L. YÜAN and Mr. HUANG WEN-PI, will be described here. YÜAN found some painted pottery north of the Bogdo-ola range, and at Hami (mentioned by BISHOP); some painted pottery discovered by HUANG at Yar-khoto is referred to in connection with my Toqsun finds.

After the departure of the main part of our expedition from Sinkiang, Père TEIL-

HARD DE CHARDIN in 1931 travelled along the highroads connecting Hami, Turfan, Urumchi, Qara-shahr and Aqsu as a member of the CITROËN-HAARDT Expedition. This famous student of geology, palaeontology and archaeology came across three different localities with what he describes as neolithic stone artifacts. The first place is situated at San-tao-lin-tze (usually called Taranchi) 81 km. WNW of Hami, the second near Ch'i-chio-ching-tze at the bifurcation of the road from Hami, one branch going to Turfan and the other to Ku-ch'eng-tze.[1] Both of these localities lie in the T'ien-shan mountains. His third place was at Aqsu, on the southern edge of western T'ien-shan bordering the Tarim Basin, from where he reports a series of prehistoric dwelling places with numerous broken stones, fragments of hand-made pottery and also small patches of ashes. The inventory from here differs from those of the other places and has no connection with known cultures. The age of the Aqsu sites is of course hard to determine. The two places in T'ien-shan seem to belong to the same neolithic cultural complex as the one so widely distributed throughout Mongolia and Manchuria.

One of the Chinese students, Mr. Y. H. LIU, who accompanied our expedition in 1928, found flint implements at Ch'i-chio-ching-tze of a type very much resembling those from Inner Mongolia. It is possible, though not absolutely certain, that TEILHARD came across the same locality as LIU.

Even with the addition of these new facts our knowledge of the cultural conditions in Sinkiang in prehistoric time remains imperfect.

*

In describing now my own discoveries of prehistoric remains in the province of Sinkiang I must point out from the beginning that the arrangement is not strictly chronological. With a few exceptions I have followed a topographical grouping, which partly coincides with the order in which the sites were found.

2. SITES WITH PAINTED POTTERY.

A. MIAO-ERH-KU.

The first site with archaeological remains which I came across in Sinkiang was in the tiny oasis of Miao-erh-ku, the first real settlement one reaches when coming from the east along the northern caravan route through The Black Gobi. This small Turkish village, which probably also bears a Turki name though we never heard of it, is situated about 85 km. ESE of Hami on the southern side of the easternmost

[1] As to the curious type of tool from here which Père TEILHARD depicts in his Fig. 13, I have found a similar one in Inner Mongolia, at Bayen-bogdo about 130 km. N of Pao-t'ou. It has not the small beak which Père TEILHARD believes to be the real 'point' of these objects. I cannot see why these tools should have such a fine and special finish with one bifacial cutting edge and one 'scraper edge' formed by the flaked-off 'core-side', if they were intended to serve only as burins. My belief is that they were a combination of knife and scraper.

T'ien-shan, here called Qarliq-tagh, and is surrounded by desert expanses on all sides. The village was flourishing at the time of our first visit in January 1928, when the finds were made, but at our second visit, in February 1934, it had been destroyed in the civil wars in Sinkiang.

Where the small brook passing through the village comes to the row of low rocks near to the south of Miao-erh-ku there is on its western side an insignificant ruin of a mud hut of dubious age, Pl. I b. (This is not the brook passing the temple from which the village has taken its name, but situated to the west of it). Around this ruin some pottery fragments were picked up from the surface of the ground on an area about 100 m. in diam., and they occurred also in the upper 10 cm. of the loessic soil.

Some of the sherds are painted, but unfortunately they are all quite small. The ware is red and reddish yellow in different shades; the thickness varies between 3 and 13 mm. The painted ornamentation consists of black lines or red stripes, Pl. 2: 1—4. Pl. 2: 3 is from a handle and shows a spruce-twig pattern, also occurring on another handle.

The plain sherds are as a rule more coarse than the painted ones, but the colour of the ware is about the same in both cases.

Of the coarser wares one sherd from a rim (No. K. 13328: 44) has small incised lines above the handle, and several sherds have a more or less thick raised border with finger impressions, Pl. 32: 6. In Pl. 32: 5 such a raised border has been given the form of an arch, probably to form a handle. Pl. 32: 7 is from a very small cup with a single row of incised commas around the neck.

Plain handles of different sizes are common. Most of them are loop-handles which have been applied vertically, but there is also an example of a horizontal lug-handle.

The bottom fragments all show flat bottoms, the walls forming a very obtuse angle with the bottom. Otherwise we know very little of the shape of the vessels; their size ranges from small cups to medium-sized jars.

Most of the potsherds are probably of prehistoric age, but among the unpainted ware there seem to be specimens of later date (Han or later?).

The only stone object found here is a part of a rude hammer with a large perforation near the centre for the handle, Pl. 4: 21. Its blunt edge shows traces of wear. It is very uncertain if it is of prehistoric origin. The only analogy known to me is a fragmentary hammer found by Birger Bohlin at Hui-hui-ch'eng-tze in NW Kansu together with a T'ang coin (MFEA No. K. 13557: 5).

B. SENGIM-AGHIZ.

Sengim-aghiz, the mouth of the Sengim valley, is situated 33 km. east of Turfan and 9 km. north of Qara-khoja on the border between the foothills of T'ien-shan



Fig. 1. Painted potsherd from Sengim-aghiz Size 2/3.

and the Turfan depression. Near to the south of the small mosque in the very mouth of the valley we found a few painted potsherds on the ground. Time did not allow of any true investigation.

The ware is red and hard-burnt; the clay has been mixed with few but rather coarse grains of sand. The colour is homogeneous through the ware. At least some of the fragments have a slip of darker red on both sides; the decoration consists of black lines. Pl. 2: 5 is from the rim of a wide bowl; the same arrangement with two parallel vertical lines recurs on two more sherds.[1] A couple of sherds are from the rims of wide bowls, probably quite low. Pl. 2: 6 shows a more complicated pattern of bent lines. Fig. 1 is from a thin-walled vessel, but the other sherds are 7—8 mm. thick.

Professor J. G. ANDERSSON has kindly drawn my attention to the general resemblance between these few sherds and his finds of painted pottery in Kansu from an intermediary stage between his second and third period. This material is still unpublished.

Among Professor T. J. ARNE's material from the Turkoman steppe we find certain general similarities as regards the ware, the colours and the ornamentation. I refer to our Pl. 2: 6 and a sherd from Chakhir-tepe (Bylin-Althin, Fig. 16). I have no intention, however, of drawing any far-reaching conclusions as to cultural relations out of this single conformity between one small potsherd from the Turfan region and another small potsherd from the Turkoman steppe near the Caspian Sea. Not only is the material insufficient, it is also of such nature that it cannot be made the basis of any sound conclusions.

C. TOQSUN.

When approaching the Toqsun oasis along the main road from Turfan a place yielding some painted potsherds was discovered in April 1928. The road cuts right across the site; as some human teeth were found it may be a destroyed grave. It is situated about 100 m. to the north of the Toqsun river and less than 1 km. to the east of the bridge across the river in question. The ground is made up of loess-like clay, which further to the east is eroded to form small yardang[2] ridges.

The potsherds are homogeneous both as regards ware and decoration, and the vessels have probably been of only one type.

The ware is rather thin, light brick-red in colour and of pretty good quality.

The decoration of the outside of the sherds consists of vertical black lines reaching from rim to bottom, Fig. 2 and Pl. 2: 8—9. On the inside of the rim there is a row

[1] Cf. the pattern on a vessel from Zhob, Baluchistan (Stein 1929, Pl. X, M M. N i 1).

[2] Yardang is the Turki word for the small curiously table-shaped clay terraces which wind erosion has modelled out of the old land surface, e. g. in the Lop desert.

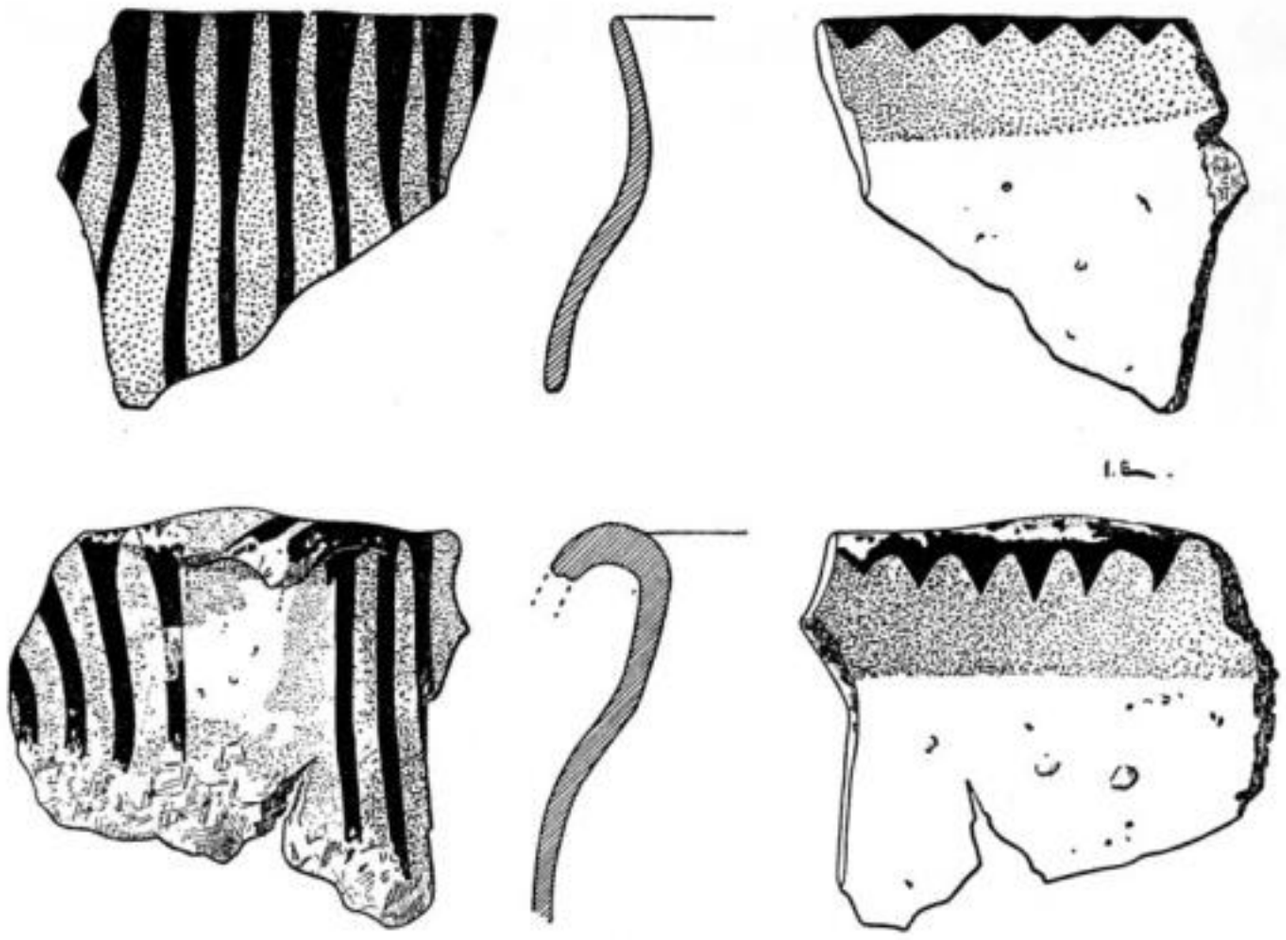


Fig. 2. Two painted potsherds from Toqsun. K. 133331 : 20 above, —: 17 below.
Stippled = red, black = black. Half size.

of black triangles, Fig. 2. The black colour is applied on top of a red slip. On the long loop-shaped handles the decoration is made up of oblique bands of two or three lines. These bands are arranged either parallel to each other or in zig-zag, Pl. 2:7. The handles have reached from the rim to a point below the widest part of the body. The profile of the neck forms a slightly concave curve gently passing over in the globular body. There are no sherds from the very bottom, but it seems as if the bottom had been rounded. If a flat part has existed it must have been very small.

The Toqsun vessels have been small and they must have represented the same general type as the one depicted on Fig. 3, but the neck is lower and less marked. The handles are identical. The original to Fig. 3 was excavated from a tomb 2 li NW of the Yar-khoto site (40 km. ENE of Toqsun) by Mr. HUANG WEN-PI of our expedition. This pot is of great importance, as the arrangement of the decoration on the body recalls the one on the Charchan vase Pl. 1, thus linking this beautiful specimen with the Toqsun pottery. But both the Yar-khoto pot and the Toqsun sherds must be much younger than the Charchan vase, this being proved by the marked difference in the artistic quality of the decoration. The Toqsun, and also the Yar-khoto pottery, give the impression of being a late and degenerate phenomenon. They do not fit in with any of the known types of polychrome wares.

HUANG assigns his painted pot to the last two centuries B.C., and further states that it cannot be anterior to B.C. 500.

He has also found some painted potsherds inside the Yar-khoto ruins (figured on his pp. 2—3). He regards them as probably neolithic "but still used in the time of



Fig. 3. Painted clay pot (black and red) from Yar-khoto. H. 144 mm. After Huang 1933.

Christ". A stone axe from a grave to the north of the ruins he is inclined to regard as a survival from neolithic time. The red clay vessels on his Figs. 2-20 he supposes to have originated in old times but assumes that they were still in use in the time of Christ.

I have not examined Mr. HUANG's finds. My impressions are thus formed only from his illustrations. It seems to me as if HUANG has placed these finds in rather late periods. The date around 500 B.C. for his painted pot appears to be nearer the truth.

HUANG's cylindrical clay vessels as shown on his Figs. 12-17 are very similar to some of ANDERSSON's pots from the Chen-fan region in Kansu (of the Sha-ching stage) where they occur together with bronze ornaments of the Ordos style. ANDERSSON dates them around 500 B.C. or somewhat later.

These cylindrical clay vessels have indeed a non-ceramic shape, and HUANG's comparison between them and a lacquered wooden vessel from Lop-nor is quite correct. However, this similarity in shape does not necessarily mean a correspondence in time. The Lop-nor wooden vessel is certainly a Chinese import and can hardly antedate the last century B.C. The cylindrical clay vessels may have drawn their form from much older wooden vessels of non-Chinese origin.

If the cemetery from where HUANG excavated both the painted pot and the cylindrical vessels is homogeneous there can be no long interval between these different kinds of pottery. We may place both around the middle of the last millenium B.C. Now my Toqsun sherds are stylistically more degenerate than HUANG's painted pot, but there can hardly exist any pronounced chronological difference.

The finds from the western part of the Turfan Basin thus seem to answer to ANDERSSON's Sha-ching group, though there is no conformity among the painted wares from these two regions.

D. THE CHARCHAN VASE.

When in Charchan in August 1928 I acquired from a Chinese merchant the beautiful earthenware vase shown in Pl. 1. According to his statement it had been found in the Kohna-shahr bordering the present oasis of Charchan, i. e. a site which I will discuss in the last part of this volume. It was impossible to get any absolute confirmation as to the exact place of discovery. Every kind of minor articles of any age which the local people of Charchan offered me for sale was said to originate from Kohna-shahr (the Old Town), and in most cases this was true. These objects were however, of an age not previous to the Han dynasty, mostly from the Sung and Yüan dynasties. The vase must certainly be considerably older than the

Han period. It seems very unlikely to me that it has been brought to Charchan from any distant place. If it was not actually excavated from inside the Kohna-shahr it must nevertheless have been in the Charchan region.

As seen from the description in the list on p. 21 f. and Pl. 1 the body is spherical and the neck slightly widening upwards. The painted decoration covers the whole surface except the lowest part, and consists of black and yellowish white on a red slip. The neck has a lattice pattern and the body a sort of "flames" and fringes. The painting is well done and gives a pleasant effect. The colour print does not give full credit to the mellow and warm tones of the original. The ware is yellowish red, rather thin, and of good quality recalling that from Toqsun.

Both the shape and the elegant polychrome design is rather unique, and thus it is at present difficult to determine its proper age with any higher degree of certainty. It does not fit in with either of Prof. ANDERSSON's groups of painted wares from NW China or with the polychrome pottery of India, the Near East or SE Europe.

On the inside of the rim there are traces of black triangles like those on the Toqsun sherds. There are other general similarities, too, such as the vertical grouping of the decorative elements, though the Toqsun vessels have had a more degenerated shape and also a much simpler decoration. It therefore seems likely that the Charchan vase is older than the Toqsun pottery, and judging from its general style, the colours and the ware, it seems to be a good specimen of chalcolithic ceramic.

LIST OF ANTIQUITIES

Miao-erh-ku.

K. 13328:1. Potsherd from rim of vessel. Near rim a painted ornament of black, open triangles. A handle has probably emerged from the actual rim. Red ware. Th. 5 mm. Pl. 2:1.

K. 13328:2. Potsherd from rim of thin-walled vessel. Light-red ware with a dark line painted along the rim.

K. 13328:3. Potsherd from the widening mouth of a vessel. The inside of the mouth has a moulding and is painted with black, vertical lines. Red ware.

K. 13328:4. Sherd from the collar of an earthenware vessel. Painted black vertical lines reach only 1 cm. below the rim. Dark-red slip on light-red ware.

K. 13328:5. Small potsherd from the neck of a small vessel. Near rim some short vertical lines in black. Light-red ware.

K. 13328:6. Potsherd from rim of wide bowl. Along inside of rim a red band 2 cm. wide. The whole exterior was probably painted red. Thick, light-red ware.

K. 13328:7-8. Fragm. of two loop-shaped handles of earthenware vessels. Red slip with black "spruce-twig pattern". Light-red ware. Br. 15 and 21 mm. —:8 Pl. 2:3.

K. 13328:9. Fragm. of handle that has emerged from the rim of a vessel. Traces of black painting. Red ware.

K. 13328:10. Fragm. of thick handle, painted dark red on the outside. Br. 27 mm.

K. 13328:11. Potsherd, apparently from a high-collared vessel. On the inside four black lines, probably vertical. Red ware.

K. 13328:12. Small potsherd with black lines forming a net. Red slip.

K. 13328:13. Small potsherd with dark-red slip and narrow black lines, probably forming a "spruce-twig pattern". Light-red ware. Pl. 2:4.

K. 13328: 14-27. Fourteen small potsherds from several vessels, all with a few black lines painted on red (more or less dark-red) slip and of very much the same red ware. Th. 3—8 mm. —: 16 Pl. 2: 2.

K. 13328: 28. Potsherd from fairly large vessel. A violet line forms an angle, with a small dot in the corner; outside the angle the surface is painted with some light-brownish colour. Light-red ware.

K. 13328: 29-40. Twelve potsherds with traces of painting in black or dark red. The ware is of different shades of red.

K. 13328: 41-43. Three potsherds with traces of dark-red painting on light-red or yellowish-red ware.

K. 13328: 44. Potsherd from rim of fairly large bowl. Has had a loop-shaped vertical handle. Red ware.

K. 13328: 45-47. Three potsherds with an applied moulding, more or less marked, with deep finger impressions. —: 46 is of coarser ware than the painted sherds. —: 45 Pl. 32: 6.

K. 13328: 48. Potsherd from shoulder of small vessel. A curved moulding with oblique impressions. Hard-burnt red ware.

K. 13328: 49. Potsherd from fairly large vessel with semicircular moulding forming a handle, with deep oblique impressions made with a stick. Same ware as —: 46. Pl. 32: 5.

K. 13328: 50. Potsherd from rim of very small vessel. On the short neck a row of small vertical incised lines. Yellowish ware, 4 mm. thick. Pl. 32: 7.

K. 13328: 51. Potsherd from rim of vessel with marked incisions across the rim. The surface has a greenish coating; moreover, the ware differs from the rest.

K. 13328: 52. Thin potsherd with striation from the finishing of the surface.

K. 13328: 53-55. Three potsherds, probably from same vessel. Incised garlands and ribbons made with three-toothed instrument. These and —: 52 might be of somewhat later date than the rest.

K. 13328: 56. Potsherd of large, thick-walled vessel with some carelessly incised lines. Hard, light-red ware.

K. 13328: 57. Potsherd from rim of bulky jar. The rim is turned over and joined to the shoulder. Thick, light-red ware. Diam. of mouth has been about 19 cm.

K. 13328: 58-63. Six small potsherds from rims of vessels.

K. 13328: 64. Potsherd from globular body of small vessel with a semicircular handle 15 mm. long. Light-red ware.

K. 13328: 65-88. Twenty-four more or less fragmentary, loop-shaped handles of earthenware vessels. Most of them with flat, some with oval section. Red ware of different shades. Br. about 3—2 cm.

K. 13328: 89. Small potsherd with a vertical lug. From both sides a hole has been drilled, but the two do not meet. Traces of black painting. Red ware.

K. 13328: 90. Fragm. of handle, probably of same kind as —: 49.

K. 13328: 91. Fragm. of vertical lug, larger than —: 89 and without holes. Reddish-brown ware.

K. 13328: 92-97. Six potsherds from flat-bottomed vessels of red ware.

K. 13328: 98. Small fragm. of vessel with steam-holes in bottom. Light-red ware.

K. 13328: 99-120. Twenty-two potsherds, some of fine, some of coarse red ware, —: 118 brownish grey.

K. 13328: 121. Spindle whorl made of brownish potsherd. Diam. 47 mm. Th. 7 mm.

K. 13328: 122-124. Three round potsherds.

K. 13328: 125. Fragm. of earthenware object, hardly a pot. Yellowish-red ware.

K. 13328: 126. More than half of a hoe or hammer of dense grey stone with a big hole from one broad side to the other. The contour has been oval. At the complete end traces of wear. L. has been about 15 cm. Br. about 10 cm. Th. 4 cm. Pl. 4: 21.

Sengim-aghiz.

K. 13329: 1. Small potsherd from the rim of a vessel. Top and outside of the rim painted black. From this border run two vertical black lines set close together. Red ware, hard-burnt and intermixed with some coarse grains of sand. Pl. 2: 5.

K. 13329: 2-3. Two small sherds, apparently from same vessel as —: 1. Both have two black lines set close together.

K. 13329: 4-7. Four small potsherds from rims of bowls. Traces of black line along the rim of two of them.

K. 13329:8. Postherd with several black lines painted on a red slip. The broader lines form obtuse angles, the thinner lines cross each other. Pl. 2:6.

K. 13329:9-16. Eight small potsherds with traces of black lines. Probably same vessel as —:8.

K. 13329:17. Potsherd with black lines arranged as —:8, though a little narrower.

K. 13329:18-19. Two small potsherds with black lines, probably same vessel as —:17.

K. 13329:20. Two joined potsherds with narrow black lines. The ware half as thick as the rest. Fig. 1.

K. 13329:21. Small potsherd with traces of parallel black lines.

K. 13329:22. Small fragm. of loop-shaded handle of clay vessel. Traces of black painting.

Toqsun.

K. 13331:1. Long handle from earthenware vessel. On a red slip there are three groups of slanting black lines, each group consisting of three nearly parellel lines. The rims were also painted black. Light-red ware. L. 11 cm. Pl. 2:7.

K. 13331:2. Upper part of handle of same type and decoration as —:1 but less clear. Probably only two lines in each group. The handle emerges from the actual rim of the vessel.

K. 13331:3. Upper part of handle like —:2, with traces of a group of three slanting lines in black.

K. 13331:4. Fragm. of long handle, narrower than the previous ones, with three groups of black lines, four in each, arranged in a zig-zag. Br. 18 mm.

K. 13331:5. Fragm. of handle similar to —:4 but the groups of black lines consist of three lines each. Br. 17 mm.

K. 13331:6. Fragm. of handle with a black-painted zig-zag band consisting of two borderlines with shorter oblique lines between. Br. 18—20 mm.

K. 13331:7-15. Nine smaller fragm. of handles of similar type and decoration as the previous ones. Br. 10—22 mm.

K. 13331:16. Seven small fragm. of handles with painting almost effaced.

K. 13331:17. Potsherd from rim of small vessel with slightly marked neck. From the rim a handle once emerged. The slip on inside reaches to 2—3 cm. below rim. The exterior decorated with vertical black lines; the inside rim has a row of black triangles. The handle was painted with black slanting lines. Light-red ware intermixed with a few grains of sand. Th. about 4 mm. Fig. 2.

K. 13331:18. Small potsherd from rim of vessel from which a handle once emerged. Of the painting only the triangles on the inside rim are visible.

K. 13331:19. Fragm. of the nearly globular body of a small earthenware vessel with the base of a handle. Red slip and vertical black lines. Light-red ware (terra-cotta). The bottom must have been nearly round.

K. 13331:20-38. Nineteen potsherds from rims of small vessels of same type and decoration as —:17. —:20 Fig. 2. (Diam. at the mouth originally 10—11 cm.).

K. 13331:39. Thirteen small potsherds from rims of vessels similar to the preceding, painting not very well preserved.

K. 13331:40-84. Forty-five potsherds from same kind of vessels as the preceding. —:40 Pl. 2:9, —:42 Pl. 2:8.

K. 13331:85-86. Various small potsherds, some of them with traces of the same kind of painting as the preceding, and all of similar ware.

K. 13331:87. Small sherd of greenish-grey flint with a few retouches.

K. 13331:88. A few small fragm. of bone and human teeth.

Charchan.

Purchased. According to statement, found in the Kohna-shahr.

K. 13334. Painted pottery vase with spherical body and high cornet-shaped neck. A little above the widest part there is a small handle on each side. Light yellow-brown ware, rather thin, contains a small amount of fine-grained sand. The neck is painted light yellow with a lattice pattern in black. The yellow slip reaches 2—3 cm. below the rim on the inside; close to the rim are traces of black triangles. The body has a

red ground-colour and is patterned in black and light yellow. Immediately below the neck is a horizontal border consisting of two lines with a wavy triple line between. Below this are seven groups of a sort of flame pattern. The "flames" are painted light yellow and curved like inverted S's. On the right side of the top of every "flame" six black lines follow its contour, converging towards the lower point of the flames. On the left side of each flame and from their lower point there is a group of 7—9 black lines following the border of the flame and converging towards the top. H. 22 cm. Diam. 16 cm. Diam. of rim 8.7 cm. H. of collar 8 cm. Pl. 1.

E. DISCUSSION ON PAINTED POTTERY.

The painted wares of Miao-erh-ku, Sengim-aghiz and Toqsun seem to have little in common with one another. The two first mentioned places seem to be more related to each other than to Toqsun. None of them, however, shows pronounced affinities with painted wares in China proper or in the Near East, possibly with the exception of Sengim-aghiz. Now the Sinkiang material is indeed so limited that this circumstance is in itself sufficient to exclude the drawing of any parallels with polychrome pottery from other regions, and no proper conclusions can be founded on it. Nevertheless, the presence of even these few items is significant as showing that the painted chalcolithic pottery does exist in this vast province, a fact that was unknown before the Sino-Swedish Expedition started its surveys. It might be worth while to touch upon the question of the importance of Sinkiang to the spread of the painted pottery.

When Professor J. G. ANDERSSON discovered the occurrence of aeneolithic cultures with painted pottery in N. China less than twenty years ago the scientific world was startled. Until then the prehistory of China was practically unknown, and painted pottery had come to light only in SE Europe and the Near East. As there existed certain striking similarities between some patterns among the earlier Chinese wares and those already known it lay close at hand to draw parallels between East and West. The Chinese painted pottery was declared to be an offspring of the Near Eastern painted pottery of late neolithic time, and the art of vase painting was stated to have reached China with a cultural stream across Central Asia in late neolithic (aeneolithic) time.

Professor ANDERSSON, the discoverer, has advanced only carefully formulated theories on these questions and repeatedly emphasized their conjectural nature, and that sufficient facts to prove the phenomena are in many cases unavailable. Some of those who have subsequently dealt with the same problems have been more confident, though they no doubt have less experience of the original Chinese material than has the discoverer.

ANDERSSON certainly believes in the migration from West to East of the art of vase painting and, furthermore, has pointed out that it probably marks the introduction of a new, superior culture, which he has explained as a step forwards in the perfection of agriculture.

MENGHIN has afterwards (1931, p. 561) characterized the carriers of the Huang-ho cultures as "Schweinezüchtern" and not as agriculturists. But everything goes to prove that the Yang-shao people carried on agriculture side by side with pig breeding, and we know that they even cultivated rice.

Through ANDERSSON's discoveries North China has been included in the vast Euro-Asiatic chalcolithic cultural complex characterized by painted pottery and the first appearance of copper.

Nowhere did the art of vase painting reach such a perfection in chalcolithic time as in the Chinese province of Kansu. The ability to work metals seems to have reached China at a somewhat later stage.

As time has passed a lot of new material has been added from many places, above all Iran, Baluchistan, India, and apparently also from Russian Turkistan. In the East several new sites have been explored inside the already known domain of the N. China polychrome pottery, and also outside this region a few specimens of painted wares have come to light, inter alia in Jehol and Inner Mongolia. The addition in comparative material has, however, hardly simplified the question of the connection between East and West in aeneolithic time, rather the opposite.

So many speculations and far-reaching theories have been advanced connecting the spread from West to East of the painted pottery with the migrations of certain peoples from SE Europe to NW China, that it is time to come down to earth again and confess that we cannot know anything about such things. As a matter of fact we know very little about the very material on which such hypotheses ought to be founded, as only a part of the Chinese pottery has been made available through publications.

Now the vase painting is a rather complicated phenomenon. It presupposes a highly developed ceramic art with skilled workmen well acquainted with the fabrication of hard-burnt wares; furthermore knowledge of the production of certain colours, and familiarity with the brush. All these circumstances taken together constitute such a complex phenomenon that it is very unlikely that the art of vase painting has evolved in different *centra* in chalcolithic time.

If we accept the theory of the art of vase painting as an importation, both the distribution and the nature of the earlier painted wares in China make it clear that the way of entrance has been from the north-west, i. e. across Central Asia.[1] Under such conditions the spread of the knowledge of vase painting must have passed through certain parts of the present province of Sinkiang. The geographical position of this province predestinates it to be an intermediary link between West and East, even though the Pamirs seem to block the southern part from any sort of intercourse with the countries west thereof. Especially north

[1] The view set forth by JANSE that the art of vase painting arrived in N. China from India via Indo-China or Yünnan is less probable. Nothing in the geographical distribution of the painted wares points to the south or south-west. (Janse 1935).

of the T'ien-shan range the relatively easily traversed Dzungarian region lies open, and here large-scale nomadic migrations have passed in later ages. In fact this is the only way possible for a migrating tribe of any size moving from east to west or vice versa.

Now everything goes to prove that the carriers of the painted pottery cultures were agriculturists, and it is very hard to imagine a migration of a sedentary people across the whole width of Central Asia from e. g. Anau in the west to Kansu in the east, a distance of at least 4 200 km. For a nomad tribe such a distance is not exaggeratedly long. But nomads carry no pottery. The discovery of intermediary centres east of Anau and west or north-west of Kansu would certainly make the migration theory more plausible. Now our finds denote the presence of painted wares in Sinkiang during a prolonged period.

We may be quite confident that one day, when archaeologists are allowed to work systematically in Russian Turkistan and Chinese Turkistan, so many sites with painted pottery will be discovered that the spaces between them will become insignificant. It is our lack of knowledge which makes the migration theory appear more difficult of comprehension than necessary.

A first step towards filling the present gap in our knowledge of Russian Turkistan is the report of such sites in Ferghana.

The Russians have apparently discovered painted pottery on the Qizil-yar steppe near Khakil-abad (the Shahr-i-Khaiber site). This pottery is said to be reminiscent of Anau I. It is published by LATYNIN (reviewed in "American Anthropologist" 38, 1936, p. 285, and 1938 p. 674, with the original plates). It seems as if the patterns on the potsherds were both incised and painted.

We hardly need to consider the possibilities of a transcontinental trade as the carrier of the vase painting art, and it is impossible to assume the importation into N. China of only a few vase painters. The Yang-shao painted ware is rather homogeneous over the whole area of its distribution, and a pretty rapid spread of this cultural element must be presumed.

The very important question of the chronology of the Chinese facies of this large cultural complex has been founded on comparisons with Near Eastern and SE European localities, and one has arrived at somewhat diverging results according to the locality which has been regarded as furnishing the closest similarities. As a matter of fact the similarities are in many cases not too convincing. If a reliable absolute chronology for the Chinese facies is to be obtained it must be based on the Chinese material itself, and though this may be difficult at present it will certainly one day be possible. The general trend among students of these questions has been to lower the age given to the Chinese painted wares, and there seems to be much in favour of this. But we are still awaiting Professor ANDERSSON's definite treatment of the chronological question.

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Fig. 4. Map of eastern Sinkiang with prehistoric sites and the courses of the Silk Roads.

In the light of these surveys of our expedition the Turfan Basin stands out as a centre for the painted pottery in Sinkiang. This fertile region, the main part of which lies below sea-level, was also the foremost cultural centre in historical time. The other sites are also grouped around T'ien-shan. In spite of the scarcity of known sites it seems reasonable to suppose that their distribution marks the general line of direction along which the art of vase painting was spread in successive waves. In the Yü-men corridor and SE of Suchow some still unpublished sites with painted pottery were discovered by BOHLIN and BEXELL of our expedition. These places are links between the Sinkiang sites and ANDERSSON's Kansu localities.

Future researches will certainly reveal many new sites with painted pottery in Sinkiang, but we can hardly expect them to contain such large quantities of high class polychrome wares as those in Kansu, Shensi and Honan.

The scarcity of finds may partly be due to the circumstance that Sinkiang was merely a transit province.

Physically this province alternates between patches of fertile oases and stretches of desert, which are largely too sterile even for a nomad pastoralism. Hence Sin-

kiang in historical times has never been the seat either of really strong states of sedentary culture or of great nomad hordes. Its main importance has instead been its position as a transit region through which migrations have swept, where trade has flourished and where the spread of some of the great religions has manifested itself.

On the other hand only a trifling part of this large province has been reconnoitred. Only a couple of the important oases, where settled life has probably existed since the introduction of agriculture, has been surveyed. TEILHARD's discoveries at Aqsu would seem to indicate the existence of apparently neolithic remains outside the area of present cultivation. We therefore await with utmost interest the results obtained by the next archaeological expedition with prehistory on its programme which goes to this far-away part of the world, so difficult to approach. In this connection the description of the localities found by me may be of some guidance.

In a future publication on the archaeological material from western Kansu and Inner Mongolia I hope to deal again, and more extensively, with the question of painted chalcolithic pottery.

3. SITES WITHOUT PAINTED POTTERY.

Besides the three places which yielded some painted pottery fragments there are other prehistoric sites characterized by the worked flints. In those cases where these flint artifacts occur together with potsherds the potsherds are unpainted.

Firstly I will mention a place at Ch'ai-o-p'u in T'ien-shan, secondly a dwelling site at Singer in Quruq-tagh, thirdly the Lop-nor finds, and lastly a place in Astin-tagh in the Charchan region.

A. CH'AI-O-P'U.

Along the main road from Turfan to Urumchi there is a small village to the west of Davan-ch'eng called Ch'ai-o-p'u. It is situated in the middle of the intermontane plain bordered on the north by the mighty snow-peaks of Bogdo-ola. One or two kilometres to the east of the village, and close to the north of the road, a few worked flints were picked up from the ground. There are five small cores, three diminutive flakes and a small scraper. One of the cores has an edge shaped as a scraper.

These flints, insignificant as they may appear, could as well have been found in the Gobi desert, where this kind of small, neatly worked flints is very common.

B. SINGER.

Singer is at present the easternmost permanent settlement in Quruq-tagh. It is occupied by a couple of Turkish families. On April 13th 1928 I discovered pre-

historic stone artifacts in the small dune accumulation on the western side of the springs that supply the village and are situated near to the south-west of it. On the western slope of this sandy elevation in the ground, where reeds and tamarisks grow, partly forming mounds, we located three different spots near each other that marked the sites of ancient dwellings. There the sand was coloured by soot and ashes on spots 1—5 m. in diameter. On a couple of these places where fires had been burning the ground was a little higher than the surrounding. In the sand pebbles and small boulders were found. These were very brittle from the effects of heating. They were not arranged in any special order but had apparently served as hearths. One of them contained some much decayed bone fragments, a couple of potsherds and a quartzite knife, the finds being made to a depth of 10 cm. Most of the loose material that once covered this site had blown away, and the artifacts were therefore found lying on the ground together with various unworked stones. They had, so to say, sunk to the bottom. Only where the surface was protected by the somewhat more resistant hearths had part of it been preserved. This is thus an example of dune dwellers.

The potsherds found are of brownish or reddish ware, not very coarse, and of a general neolithic appearance. Only a couple of them have an incised line or applied nipples as decoration.

I found twenty-three cores or nuclei of flint or flintlike stones partly fragmentary, and over 300 small elegantly shaped flint flakes, most of them with sharp edges, others having retouched edges.

The drills Pl. 4: 1—2 are made of this kind of small flakes, their tips being retouched from alternate sides, the ideal cross section of the tip forming a parallelogram or rhomb. The small finely trimmed piercer or awl of white flint shown in Pl. 4: 3 is of a unique shape.

The most interesting group among the implements is comprised by the arrow-heads, which occur in an unusually large number and show an admirable workmanship, Pl. 3: 1—17. The slender willow-leaf shape is also very elegant, and some of them have an extremely sharp tip. Pl. 3: 12—17 are less sharply pointed, and as some of them are of a coarser make they are probably unfinished. There are also fragments of arrow-heads both of greater and lesser perfection.

This type of arrow-head is known from the Lop desert (Pl. 4: 13 and Stein 1921, Pl. XXX, C. 122. 0054, and Stein 1928, Pl. XXII, L. I. 012 etc.). I have never encountered this type in Inner Mongolia.

The small flint objects Pl. 3: 19—20 I call knives because one edge is straight and the other convex, though they may easily have served as arrow-heads as well. This type is known from Inner Mongolia and the Kansu corridor. Pl. 3: 21—22 show two somewhat larger knives.

It is hard to distinguish between fragments of this kind of knives and fragments of the larger arrow-heads.



Fig. 5. The flint object No. K. 13332: 112 from Singer. 2/3.

There are fragments of knives which when complete were larger than those depicted on Pl. 3, but none of them seems to have been of the elliptical or rectangular shape known from Prof. ANDERSSON's China collections.

The scrapers, eleven in number, are made of broad and short flakes, the shape varying from oval to nearly circular. They are all very small, the largest measuring 4×3 cm. The same diminutive scrapers were found at Chiqin-sai (cf. p. 35 f.) and they are extremely common in Inner Mongolia. As the majority are of about the size of a thumb nail they must have been hafted with bone or wood.

A kind of roughly worked bifacial instrument shown in Fig. 5 was found in three specimens. A similar one comes from the Lop desert, Pl. 4: 17. I have found many of this type but mostly of finer workmanship in Mongolia. Their actual use is somewhat uncertain, though it seems possible that they served as small cleavers. Père TEILHARD calls them points with retouched heel (Teilhard Fig. 10).

Various coarse flakes, reject and refuse chips and flint blocks occurring all over the surface layer of the site indicate that the implements were worked on the spot.

ERIK NORIN, on seeing this material, was eager to help me to ascertain from which localities the Singer people draw their supply of raw material for the manufacture of their implements. He therefore made a few specimens the subject of a petrographic analysis, and he has kindly placed the following statement at my disposal:

"1) Yellow-brown dense phtanite, occurring along the southern side of Qizil-singer-tagh, is a slightly metamorphic type of carbonaceous chert which forms the base of the Upper Cambrian limestone series. In my stratigraphy called $C_{1\beta}$.

2) Light greyish phtanite. Same occurrence as No. 1. Is a slightly metamorphized type of the light coloured chert which forms the lower part of the last mentioned horizon. In my stratigraphy called $C_{1\alpha}$.

3) Dark greyish green flint ('hälleflinta'). An effusive lava or tuff of keratophyric composition. Also occurring in the neighbourhood of Singer.

These kinds of stones have also a wide distribution to the south of Buruntu-bulaq and between Buruntu-bulaq and Altmish-bulaq."

This examination thus proves that the raw material used by the stone age people of Singer was taken from a source close at hand.

Other stones used are quartz, quartzite, flint of grey, green and white colour, agate, felsite, chert and porphyry, all occurring near Singer.

A flat slab of garnet-micaschist rubbed down smooth on one side may possibly have been used as a grinding stone, and two strongly weathered fragments of sandstone are from a mealing-stone. The occurrence of mealing-stones does not necessarily mean that the people carried on agriculture here. The stones may have been

used for mealing some edible seeds. In the main the people here had probably to rely on hunting for their living.

There are a few differences between the Singer material and that which I know from Mongolia, but there are more analogies, and the composition of artifacts is the same in the Singer site and in the Mongolian sites. It therefore seems appropriate to characterize them as belonging to the same cultural complex, i. e. the Gobi culture or the Mongolian-Manchurian late neolithic.

LIST OF ANTIQUITIES

Ch'ai-o-p'u.

K. 13330:1-2. Two cores of grey flint. —:1 is oval in section and neatly pointed. L. 38 and 29 mm.

K. 13330:3. Core of leparite(?) one side untouched, the convex edge forming a scraper. L. 30 mm.

K. 13330:4-5. Two small, almost cylindrical cores of agate and leparite(?). L. 20 mm.

K. 13330:6. Small flint flake.

K. 13330:7. Small oval flint flake.

K. 13330:8. Flake of chalcedony with retouched edges.

K. 13330:9. Small scraper of green flint.

K. 13330:10. Sherd of greenish-grey flint.

Singer.

K. 13332:1. Small potsherd of brownish ware with a straight, incised line.

K. 13332:2-3. Two small potsherds of fairly large vessels of rather thin brownish ware.

K. 13332:4. Forty-nine potsherds of brownish or reddish ware.

K. 13332:5-15. Eleven cores of flint, agate and felsite.

K. 13332:16. Eight fragm. of flint cores of various sizes.

K. 13332:17-18. Two roughed-out cores of agate and felsite.

K. 13332:19. 275 fine small flakes of flint, agate etc.

K. 13332:20. 47 small flakes with retouched edges.

K. 13332:21. Small narrow flint flake, but rather thick, and with one edge retouched.

K. 13332:22. Flint piercer made of small flake. Rather blunt point. L. 33 mm. Pl. 4:1.

K. 13332:23-24. Two flint piercers with broken points. Same type as —:22.

K. 13332:25-26. Two flint piercers, willowleaf-shaped like arrow-points. L. 20 and 30 mm.

K. 13332:27-34. Eight awls or piercers of flint and agate. Of slightly different type. —:29 Pl. 4:3, —:34 Pl. 4:2.

K. 13332:35. Small flint flake with one edge retouched and the median ridge chipped on one side.

K. 13332:36. Fourteen small flint flakes with the more or less high median ridge chipped on one or both sides.

K. 13332:37. Curved flint flake with the high median ridge chipped on one side.

K. 13332:38-41. Four very slender, willowleaf-shaped arrow-points of phtanite and flint. Perfectly finished. —:41 is made from a small flake. L. 49—34 mm. Br. 13—7 mm. Pl. 3:1—4.

K. 13332:42-47. Six leaf-shaped arrow-points of flint and quartzite. Shorter than the previous ones. L. 39—25 mm. Br. 13—11 mm. Pl. 3:5—10.

K. 13332:48. Very thin leaf-shaped arrow-point of grey flint. 19×9 mm. Pl. 3:11.

K. 13332:49. Leaf-shaped arrow-point of flint, coarsely made. 38×20 mm. Pl. 3:12.

K. 13332: 50. Leaf-shaped arrow-point of agate, rather thick. 38×15 mm. Pl. 3: 13.

K. 13332: 51-52. Two leaf-shaped arrow-points, or maybe piercers, of quartzite and flint. L. 26 mm.

K. 13332: 53. Small oval arrow-head(?) of dark-grey flint. Rather blunt. 14×8 mm. Pl. 3: 18.

K. 13332: 54. The broken-off tip of a well-made arrow-point of quartz.

K. 13332: 55-57. Three leaf-shaped arrow-points of chert and quartzite. L. 43—33 mm. Pl. 3: 14—16.

K. 13332: 58. Very blunt arrow-head, or possibly knife, of grey flint. 34×18 mm. Pl. 3: 17.

K. 13332: 59-60. Two coarse, unfinished arrow-points of quartzite.

K. 13332: 61-63. Three pointed sherds of chert and quartzite.

K. 13332: 64-67. Four fragm. of flint arrow-points or small knives.

K. 13332: 68-69. Two small knives of quartzite, one edge straight, the other slightly convex. 39×13 and 33×8 mm. Pl. 3: 19—20.

K. 13332: 70. One half of a small knife of yellow phtanite. Made from a flake. Br. 11 mm. Pl. 4: 5.

K. 13332: 71. Knife of greyish-green chert. One edge more convex than the other. Coarsely made. 85×24 mm. Pl. 3: 21.

K. 13332: 72-73. Two coarse knives of quartzite, probably unfinished. —: 72 made of a naturally thin piece of stone. Pl. 3: 22.

K. 13332: 74-85. Twelve fragm. of knives of quartzite and flint.

K. 13332: 86-95. Ten fragm. of coarse knives of quartzite, chert and flint.

K. 13332: 96-106. Eleven scrapers of flint, quartzite and felsite. Nearly oval or round. From 40×29 to 15×16 mm. —: 103 Pl. 4: 4.

K. 13332: 107-108. Two flint scrapers with unfinished retouching.

K. 13332: 109. Thick quartzite flake with some retouches along one edge. 55×28 mm.

K. 13332: 110-111. Two small fragm. of flint scrapers.

K. 13332: 112-114. Three bifacial implements of flint and quartzite, one end straight, the other convex. 42×32, 36×31 and 34×27 mm. —: 112 Fig. 5.

K. 13332: 115. Part of a core(?) of dark-grey porphyry, the thin edges chipped on each side.

K. 13332: 116. Nine small objects of quartzite and flint, worked on both sides. Partly knives or cutters, partly fragm. of indeterminable implements.

K. 13332: 117. Seventeen discs of coarse sherds of quartzite and flint, more or less worked.

K. 13332: 118. Eight pointed sherds of quartzite, partly unfinished arrow-heads.

K. 13332: 119. Eight coarse flakes of flint and quartzite, the edges more or less retouched.

K. 13332: 120. Various coarse flakes of different coloured flints and quartzite.

K. 13332: 121. Various refuse of flint, agate and quartzite.

K. 13332: 122-123. Two small fragm. of a grinding stone of sandstone.

K. 13332: 124. Fragm. of grinding stone(?) of garnet-micaschist. One side ground flat.

K. 13332: 125. A few bone fragm. and charcoal from a hearth.

K. 13332: 126. Potsherd from rim of vessel with slightly curved neck and two marked nipples below the neck. Reddish-brown, rather hard-burnt ware, cf. —: 1—4.

K. 13332: 127-128. Two small potsherds from the upright rims of two vessels, same ware as the preceding.

K. 13332: 129-132. Four potsherds of same ware as the preceding.

K. 13332: 133. Core of grey flint, nearly cylindrical. L. 40 mm.

K. 13332: 134. Part of core of quartzite.

K. 13332: 135. Arrow-point of quartzite, leaf-shaped, rather thick. L. 45 mm. Unfinished?

K. 13332: 136. Part of thin natural disc of quartzite; the convex edge has probably been used for cutting.

K. 13332: 137. Fragm. of bifacial object of quartzite. Cf. —: 112.

K. 13332: 138. Partly worked block of felsite.

K. 13332: 139. Thick sherd of quartzite with worked edges.

C. THE LOP DESERT.

From the Lop-nor region prehistoric finds were collected by HÖRNER and CHEN in the winter season 1930—31 during their important surveys of the Lop desert, which resulted, inter alia, in the only existing map of Lop-nor in its present northern position. In 1934 Mr. CHEN made a few additional finds along the lower part of Qum-darya, and in the same season I found some places with worked stones etc. mainly in the desert south of Yardang-bulaq.[1] They are all mentioned in the descriptive list together with the stray finds from the historical period; in this chapter only the main types will be discussed and such combinations of finds as probably mark dwelling sites.

Hypothetical dwelling sites.

The most important objects for dating prehistoric cultures are as a rule the ceramic wares. Unfortunately very few potsherds have been collected together with worked flints in the Lop desert. In HÖRNER's collection there is one instance, K. 13363, and in my own collection there are three instances, Nos. 22, 25 and 28.

These potsherds are rather homogeneous as to their general appearance and more worn by the moving sand than the sherds from the time of Lou-lan. This circumstance shows either that they are of a quality inferior to that of the Lou-lan pottery or that they have been exposed for a longer time. Both possibilities suggest an earlier age than the Lou-lan occupation. The ware is light brownish with red and grey stains. Rather coarse-grained sand has been used for mixing with the clay. Most of the sherds are plain. No. 28: 1 has a raised border below the rim, and 28: 2 has had a raised décor of applied bands with striations. It is not impossible that the decorated sherd Pl. 29: 2 is of prehistoric origin, though its surface is well-preserved. A few more potsherds found separately and without accompanying stone implements may also belong to this group.

We will now examine the worked flints from those localities which may be regarded as probable dwelling sites. I take only those places where there is no admixture of metal or definitely Lou-lan time pottery. The first four are situated near to the south of Qum-darya below Yardang-bulaq. The places are mentioned in sequence from west to east; cf. the maps Fig. 36—37.

No. 22 is just a couple of diminutive flint flakes beside a single potsherd, and No. 25 has one potsherd, an irregular flint core, a couple of flakes, the coarse knife or bifacial implement Pl. 5: 10 and two large flint blocks with chipped-off surfaces. I

[1] On HEDIN's earlier maps the name Yardang-bulaq has been applied to a well otherwise called Dolan-achiq 10 km. NNW of the true Yardang-bulaq, which is situated only about 3 km. NW of Yaqa-yardang-bulaq. At Dolan-achiq there are no yardangs.

mention these two localities because I found them myself and I therefore know that everything on the spot was collected.

No. 28 consists of a few more objects. I came across them south of camp B 61 on wind-eroded yardang-ground about 500 m. from the southern bank of the river. They were lying scattered in 2 m. deep hollows as well as on adjacent yardangs covering an area of about 60 m. in diameter. There are no typical cores and only three small flakes. Pl. 4: 13 is a willow-leaf arrow-head of agate of the same shape and make as those from Singer in Quruq-tagh. Pl. 4: 14, a fragmentary arrow-head of green flint, has the base shaped into a short tang, a feature that does not occur among the flint points of Inner Mongolia; STEIN gives a picture of one complete specimen from his Fort L. E. Besides an uncertain small scraper there are small knife-like implements worked on both sides, Pl. 4: 6, 4: 9 and 5: 9, and a small bifacial instrument Pl. 4: 17. A couple of larger flint pieces are "raw material" for making chips, and there is a certain number of refuse chips.

Mr. CHEN found the place No. 30 on the south bank of the river. The four cores and the four small flakes of agate and flint are very similar both in shape and material to those found closer to the lake.

In HÖRNER's and CHEN's collection from 1931, containing about 280 objects, there are artifacts from five probable dwelling sites.

HÖRNER found a rich site about 14 km. WSW of the Lou-lan station in a sandy depression in wind-eroded clay. The place bears the number K. 13375 in the descriptive list and 375 on the map Fig. 37. The following objects were collected: a fragmentary flint core or nucleus, sixty-five flint flakes, many of them with retouched edges as Pl. 5: 3—4. Two narrow piercers or awls are made from small flakes. Besides there are some unworked chips. Now this is only the pick from the site and the material is of course rather limited to be labelled as representing a true dwelling site. This is still more the case with the following places.

K. 13395 (395 on the map) consists of a few flint flakes found near the southern border of the delta NNE of the Lou-lan station.

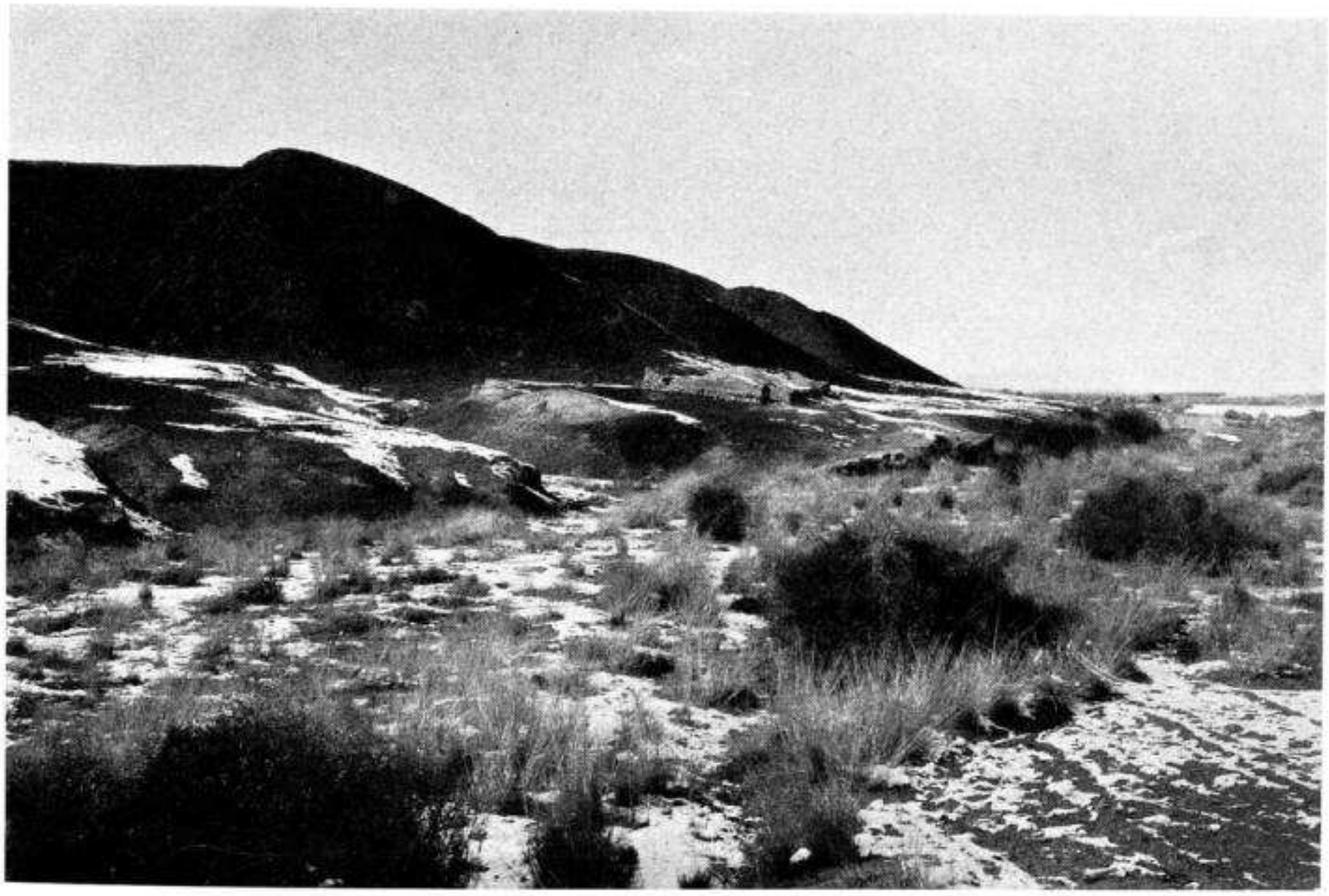
K. 13359 (359 on the map) is also only the pick from a site with hundreds of worked flints in a large wind-hollow, 4—5 m. deep, situated near the western border of the big salt crust. He collected three flint cores (Pl. 4: 18) and twenty-nine flakes, some of which have one or both edges retouched.

The objects K. 13363 were found in a region with several stray finds of a neolithic nature to the NE of the preceding place (cf. Nos. 362—365 on the map, and HÖRNER also noticed antiquities in this region which were not collected). Only a small potsherd and four flint flakes were taken from this site where flakes are said to be numerous.

K. 13431, finally, a place situated on the eastern side of the easternmost of the three freshwater bays in the northern part of Lop-nor. Here the neatly shaped bi-



a. Tomb structure between Yaqinliq-köl and Qum-darya.



b. Miao-erh-ku. The potsherds K. 13328 were found on the low terrace in front of the hills.

Pl. II.

a. Landscape south of Yaqinliq-köl and east of The Small River.





b. Dead forest near to the south of Qum-darya.



c. Grave 10. The coffin partly broken up.

facial instrument Pl. 5: 1 was found together with the drill Pl. 4: 7 and an untrimmed flake. The first object may have served as a knife or cleaver.

Scattered finds.

Cores or nuclei of flint are not uncommon in the Lop desert. Even in Dr. HEDIN's old collection there is one, and here some specimens have been reproduced on Pl. 4: 16, 20, 22 and Pl. 5: 14. As a rule these cores are less regularly shaped than those from Inner Mongolia, partly owing to the fact that they have been flaked off in more than one direction. Most of them are micronuclei.

The flakes struck off from the cores are very common. They are slender, as a rule very small, and elegantly made. The larger specimens, which are up to 8 cm. long, may have been used as knives without any extra handle, whereas the ordinary sized flakes have probably been fitted into grooved handles of bone or wood and used both as knives and sickles.

No cores answering to the long flakes have been found. This is only natural, as cores get used up through the flaking-off process. On flakes protected from wind erosion the untrimmed edges still retain their sharpness.

Pl. 5: 6 has both edges retouched, and the spoon-shaped end may possibly have been suitable as a small scraper, which is also the case with Pl. 5: 7, where the median ridge is chipped from both sides, forming a zig-zag. Pl. 5: 5 shows a thicker flake with a similarly treated ridge.

Drills and awls were made from the flakes. Pl. 4: 7 is a typical drill, the retouches along the tip being placed on alternate sides. K. 13386: 6 is another drill, and Pl. 4: 8 shows an agate drill made of an irregular flake with two blunt points.

In our collections from Lop-nor there are only some atypical scrapers. This is a difference between Singer and Lop-nor. STEIN gives a picture of a good scraper (1928 Pl. XXII, C. xciii. 0158).

The occurrence of true arrow-heads is also very rare. Besides those mentioned from No. 28 there is only Pl. 4: 12 from the northern border of the delta.

The two somewhat similar flint objects Pl. 5: 2 and 5: 8 are either coarse knives or unfinished points.

The last group of Lop-nor implements are the polished axes of green chert or other jade-like stones. The largest specimen is the beautiful axe Pl. 5: 16 which was found by a Turkish servant on the eastern side of The Small River south of Yaqin-liq-köl (point 2 on the map Fig. 36). It measures 185 mm. in length. Pl. 5: 11 is of exactly the same type with convex cutting edge, but only 50 mm. long, but the rest of the small axes have very straight cutting edge, Pl. 5: 12—13, 15 and 18—21. Pl. 5: 21, of light brown chert, is the only axe which is thoroughly polished all over. The others have only the cutting-edge properly finished but no real butt and only

slightly marked narrow-sides. This is also true of the three jade axes which PELLIOT obtained at Qum-tura near Kucha. The largest of these is 14.6 × 7.4 cm. and corresponds to our Pl. 5: 16, the other two are 5.8 × 4 and 5.7 × 3.2 cm. respectively and correspond to the ordinarily sized Lop-nor axes. The exact finding places of PELLIOT's axes are not recorded. If they were found somewhere near to Kucha, where they were purchased, they indicate that the stone age culture which is known from the Lop desert was distributed over a large area of the Tarim Basin. In their general shape the small ones call to mind the axes found by ANDERSSON in the Sha-kou-t'un cave together with Yang-shao painted pottery. This circumstance does not necessarily imply any cultural or chronological connection. Though the straight edges in both cases denote late facies. It might be worth mentioning that this short but broad axe-type is missing in Inner Mongolia — at least in those parts where I have travelled — and also in Honan and Kansu (Bergman 1935 a).

Though the general type of the flint blades and cores from Lop-nor is the same as that occurring in the other Sinkiang localities and in Inner Mongolia, they may easily be distinguished when placed side by side. The Lop-nor objects are as a rule much sand-worn, showing that they have been lying exposed to wind erosion for a considerable length of time, whereas corresponding articles from the other sites mentioned show few or no traces of being sand-worn. Moreover, the raw materials in the Inner Mongolian objects are much more varied.

No petrographic analyses have been made of the Lop-nor material. Dr. T. DU RIETZ has, however, kindly undertaken an ocular examination of some of the worked stones from here. Most of the stone material passes under the name of flint. Agate, jasper, chalcedony and chert also occur. In the market most of the stones here called green chert would pass as jade, and I at first labelled them as jade.

There do not exist any stones in the lacustrine and fluvial sediments of the Lop-nor basin. Raw material for the manufacturing of tools and weapons had to be brought from the surrounding mountain regions, i. e. Quruq-tagh in the north or Astin-tagh in the south. NORIN has found a geological formation containing siliceous beds at the base of the Cambrian (lydite, radiolarite), which stretches along the whole length of Quruq-tagh from Korla to Altmish-bulaq. Some Lop-nor objects are made of this kind of "flint". It seems likely that siliciferous stones suitable for making artifacts are to be found in the Astin-tagh as well. (Cf. the site Chiqin-sai). The Quruq-tagh formation was in any case the nearest place where flint could be "mined".

As seen from the above the finds of worked flints from the Lop-nor region are rather few, both in number and types, and as there is practically no ceramics no definite chronological deductions can be undertaken. All stratigraphical evidence is lacking, and in many cases we do not know from what kind of deposit the objects originate. No traces of palaeolithic implements have been met with; such can only be ex-

pected outside the clay desert. The true implements existing point to a pretty late prehistoric facies.

As to the distribution of these remains it seems as if they occurred in a somewhat larger quantity in the region south of the present delta than elsewhere. Nevertheless, with our present knowledge we can only state that the flint artifacts cover about the same area as do the finds from the time of Lou-lan. It thus seems likely that there can be no long interval between the time of the stone age occupation and that of Lou-lan. Nothing contradicts an assumption that flint implements were still used by the autochthon population when they first got into contact with the Chinese about 2.000 years ago though they probably had passed the stage of true stone age already at that time.

There are instances when stone implements of neolithic types have been found in ruins from the time of Lou-lan (e. g. the axe Pl. 5: 11 in the fortress L. K.). But the implements may have been deposited there before the construction of the fortifications, and no definite chronological criteria can be reached in this way. The four stone arrow-heads from Cemetery 5 which are depicted on Pl. 12: 3—6, on the other hand, are apparently contemporaneous with the burial place. Their obviously inferior workmanship as compared with other arrow-heads from the Lop-nor region makes it appropriate to characterize them as survivals of a true stone age.

Until we have discovered a site with full inventory and the finds resting in situ we had better postpone further discussion of the Lop-nor stone age. The hope of finding such a site is extremely small. Only lucky circumstances would account for the preservation of such ancient strata in this desert where wind erosion is more powerful than in almost any other place.

D. CHIQIN-SAI.

When in July 1928 HASLUND and I approached Charchan from the upper sources of Charchan-darya we followed the ordinary road which skirts the western extremity of Astin-tagh at Chuqur-davan. In the valley of Chiqin-sai and not very far from the northern foot of the mountain a few worked flints and a couple of potsherds were found on a small open space in the valley. The place is situated about 65 km. south-east of Charchan. Cf. the map Fig. 4.

Three of the potsherds recall the plain pottery from the Singer site in Quruq-tagh, whereas another two show traces of incised lines made with a dentated tool.

There are forty-seven diminutive flint flakes, some of which have retouched edges, two small cores from which such flakes have been struck off, and eight very small scrapers.

The objects are of the same types as those common in Inner Mongolia, which are ascribed to the neolithic age.

This small site is of interest as being the first one discovered on the southern rim of the large Tarim Basin.

LIST OF ANTIQUITIES FROM CHIQIN-SAI

K. 13333: 1-2. Two small potsherds with traces of incised pattern, a wavy double line between two straight lines, and probably a garland incised with a dentated instrument. Light-red ware.

K. 13333: 3-5. Three small potsherds of red and reddish-brown ware recalling the Singer ware.

K. 13333: 6-7. Two fragm. of small flint cores.

K. 13333: 8. Thirty-nine small flint flakes.

K. 13333: 9. Eight small fine flint flakes with retouched edges.

K. 13333: 10-16. Seven small scrapers of grey flint.

K. 13333: 17. Various flint refuse and coarser flakes.

E. CONCLUSION.

MENGHIN characterizes the Lop-nor stone age finds made by STEIN as probably belonging to the Gobi culture and an "epi- und opsimiolitische Fazies der Reittierzüchterkreise"; he does not believe that this culture knew cattle breeding (Menghin 1931, p. 315). All this seems somewhat daring, as not even the slightest trace of any "Reittier" bone has been found together with these implements. And the implements themselves are few and of rather common types.

The differences between the Lop-nor artifacts and those from other Sinkiang sites are not large enough to denote anything but local variations inside the same culture. And the same is true regarding the whole Sinkiang material when compared with that from Mongolia. They all belong to the same Gobi culture. This collective name seems very appropriate as long as we can assign no more precise chronological limits or any classification in well defined groups.

Very much the same natural conditions prevail in Sinkiang and in Mongolia, and the same desert covers large parts of both countries. This Gobi culture was most likely carried by nomads who moved with their herds in this extensive area of steppes and deserts. But it is still too early to make a pronouncement as to the kind of domesticated animals they relied on.

*

The painted wares in China first appear in aeneolithic time. Any extensive remains from true neolithic time have not been discovered in China as yet. In Mongolia and Manchuria sites with neatly worked flints and unpainted hand-made pottery are quite common. Unfortunately most of the Mongolian finds occur on the eroded Gobi surface, and we have very few stratigraphical fix-points. The chronology and the relation to the painted pottery cultures are therefore uncertain. Nevertheless, there are some general indications which make one inclined to regard the Mongolian flint

sites as genuinely neolithic and somewhat anterior to the painted pottery. As the Sinkiang finds which are characterized by micro-implements of flint must be placed in the same extensive Gobi culture as the Mongolian finds, their first appearance must be anterior to the oldest painted ceramics in Sinkiang.

*

The scarcity of finds does not necessarily mean that the province of Sinkiang was poorly inhabited in prehistoric time. The fact that our collections of stone age articles from Sinkiang are far less numerous than those from Mongolia is at least partly explained by the different modes of travelling that we used during the expedition. In Mongolia we used camel caravans, making — as a rule — pretty short marches, and thus getting much time for investigating the ground. In Sinkiang we were travelling in carts for long stretches of the highways, partly under military supervision, and covering the long stages in ordinary local tempo, which allows of very little field research work. Moreover, large parts of the ground traversed under more favourable conditions were hidden by sand dunes or thick vegetation, which is more seldom the case in the parts of Inner Mongolia visited by us. If we make due allowance for what has just been said we shall not attach too much importance to the distribution of finds as shown on the map Fig. 4.

*

Let us now turn to the historical time and concentrate our attention to the Lop-nor region.

PART II.

THE LOP-NOR REGION IN HISTORICAL TIME

1. HISTORICAL INTRODUCTION.

The first mention of Central Asia, and probably also the Tarim Basin, is a very brief notice in the fifth chapter of Shih-chi, referring to the year 623 B. C. (de Groot 1921, p. 21). It seems that twelve western kingdoms were conquered at that time by Mu of Ts'in. This political domination may have resulted in some cultural relations in one direction or other, but it is hardly likely that any transcontinental trade developed. At the time when the Chinese records begin to shed some light on the north-western part of the present Kansu province we find the Yüeh-chih living in the Kansu corridor. This people may have traded with Chinese goods, bringing them into the Tarim Basin. The Yüeh-chih, or Tokharians or Indo-Scythians as they are called later on in more westerly regions, seem to have been a people of certain qualities, and why not able traders.

So far we have no definite proofs of such possible relations. When the Hsiung-nu under Mao Tun had the whole Tarim Basin and the Yüeh-chih country under their sway, every kind of intercourse was cut off, and at that time, between 174 and 160 B. C. the main part of the Yüeh-chih tribe was chased out of their pastures in Kansu. There is thus no traceable Chinese influence in the Tarim Basin previous to the end of the second century B. C., when the big Chinese expansion began into Central Asia.

When in B. C. 140 Emperor Wu of Han[1] ascended the throne, China's northern frontier region was being harassed by frequent raids of the Hsiung-nu or Huns. Perceiving the grave frontier situation, the Emperor dispatched Chang Ch'ien on an embassy to the Yüeh-chih tribe, at this time living to the west of the Pamirs, hoping to stir up their old hatred towards the Hsiung-nu and to induce them to start hostilities with the common enemy. Chang Ch'ien failed in this undertaking, but his journey to the western countries resulted in the discovery of Central Asia, of which the Chinese had until then had very vague or no knowledge. We will mention this in the following.

Failing in his bid for assistance from the Yüeh-chih, Emperor Wu had to rely on his own resources. Luckily for the Emperor, a man of unique abilities placed his

[1] The Han dynasty: 206 B.C.—221 A.D.

sword at his disposal. This was the young general Ho Ch'ü-ping, whose illustrious name has never faded in the historical books of the Chinese. In a three year campaign, between 121 and 119 B. C., he wrested north-western Kansu from the Huns.

In order to make the exposed Kansu corridor secure against the inroads of the nomads, very extensive fortifications were constructed. The Great Wall was extended to a point north-west of Tun-huang. Several military garrisons were founded, and along the Edsen-gol[1] valley, which afforded the easiest approach for attack from the north, the Chinese caused the building of walls, signal towers and fortresses, and these were also garrisoned. This was the district of Chü-yen where I was fortunate enough to discover, in 1930—31, a large number of Han records on wood.

What had been a road of invasion for the Huns since the expulsion of the Yüeh-chih now became a road of expansion for the Chinese.

Though China still had to suffer from Hsiung-nu inroads during several centuries, it was this strong and active anti-Hun policy of Emperor Wu which started the downfall of the Hsiung-nu power in Asia.

Chang Ch'ien's mission to Central Asia has received its due credit from all students dealing with the early inter-relation between China and the West. When this famous ambassador returned from his eventful journey to the Chinese capital in B. C. 126 or 125 he was full of surprising news about rich foreign countries in the west, whose existence had until then been unknown to the Chinese. A whole new world now lay open to the powerful Emperor Wu. After this the fighting down of the Huns was not only a question of pacifying the frontiers. It acquired a deeper significance. Until then the frontiers had for the Chinese represented the end of the civilized world. But Chang Ch'ien's report spoke of many rich countries behind the fringe of barbaric tribes surrounding China, and the hope of opening relations with these far off countries accelerated the campaign against the Huns.

Especially the tales of the 'blood-sweating' horses of Ferghana seem to have aroused the particular curiosity of Emperor Wu, and he did not hesitate to dispatch two very expensive military expeditions across the vast distances of Central Asia with the sole object (at least so it is said) of bringing back those famous steeds. By means of equipping his cavalry with superior horses the Emperor hoped to beat the Hsiung-nu nomads at their own tactics. After the success of the second expedition to Ferghana the prestige of the Chinese was firmly established along the routes through Central Asia, and it was followed by a remarkable development of trade. The quest of the strange, coupled with mercantile interests, drew Chinese

[1] Following Mr. Unkrig's suggestion, I use this new spelling for the river name usually written Etsin-gol or Edsin-gol. The true literary form is Edsen-gool. The local pronunciation of the first part varies between Edsine, Echine and Ejine.

traders and adventurers out on the great routes westwards, and these now became "Silk Roads", as the main item exported by the Chinese was silk.

It is really only through the historians of the Roman Empire that we have any theoretical knowledge of China's silk trade. When the Romans had conquered Syria in B. C. 64 they learnt about a far away eastern people producing silk. This people they called Seres from the product by which it was known, but they were ignorant as to the situation of their country. The name Seres seems, however, to have been applied collectively to all those peoples of the East which were engaged in the silk trade as intermediaries, such as the Tokharians, the Wu-sun and the Sakians. Later on it came to denote the real silk producers, i. e. the Chinese.

It was more the Roman demand for silk than the Chinese demand for Western products that kept the trade going, and we may be sure of one thing: the Chinese got huge profits out of the silk trade, to say nothing of the peoples further west who served as intermediaries.

To the rich and luxury-loving Romans Chinese silk became a necessity. But they were not satisfied with the Chinese textiles in the form in which these arrived in Syria. The bizarre scrolls and fantastic beasts which made up the Chinese designs of the polychrome stuffs did not appeal to the Roman's strict sense of classical art. The textiles were therefore rewoven, but as the Chinese silk thread is thinner and longer than any existing fibre it was the most appreciated of all textile materials.

Fortunate discoveries in the Crimea and at Palmyra have brought to light specimens of real authentic Chinese silk of the Han period, which most likely reached these places along the Silk Roads across the whole width of Asia (Toll, Pfister). Besides silk, the Chinese exported certain art objects of bronze (cf. note on p. 165).

"In the Vicus Tuscus in Rome there was during the early centuries of our era a market for Chinese silk. The traffic of this silk was the most far-reaching large-scale commerce of antiquity. Since the silk might be produced in the littoral of the Yellow Sea and since Roman fashionable society existed for its demand in Spain, Gaul and Britain, the trade drew the threads of its exquisite material as a bond of economic unity across the whole of the Old World from the Pacific to the Atlantic." (Hudson, p. 68).

Glass was one of the few articles exported by the Romans to China. In most instances they had to pay for the Chinese silk in gold. In China glass ranked among the precious materials beside jade and crystal. Until some ten years ago the earliest Chinese-made glass was supposed to be of the middle of the fifth century A. D. Now we are aware that the manufacture at least of glass beads was known in China already several centuries before our era. (Kümmel 1928, Seligman 1938.)

The powerful imperialism of Emperor Wu was the necessary foundation for the establishment of the overland silk commerce. But once established, it seems to have been able to survive severe stress from political disintegration — probably, as sug-

gested by HUDSON, because the profit to be derived from it had become obvious to even the more barbaric peoples along the routes.

A. THE ROADS.

In considering the course of the main roads along which the silk trade flourished I restrict myself to those parts which fall inside the eastern Tarim Basin and its nearest surroundings. They have been tentatively marked on the map Fig. 4. Lateral roads also existed but they have been left out of the discussion here as they are of more local interest.

Ch'ang-an, the Han capital of China, may be regarded as the true starting point of the Silk Road, and its western terminus was probably Antioch in Syria. This means a distance of nearly 7000 km.

At Tun-huang the road divided into two branches, and later on a third was added (Chavannes 1905, pp. 528 ff). Baron von RICHTHOFEN, the famous German geographer, has coined the name Silk Road for these ancient caravan routes, and this name has since been widely used by Westerners, though hardly by the Chinese themselves.

From Tun-huang the southern route ran inside or along the Astin-tagh as far as Miran, and thence followed the southern rim of the vast Taklamakan desert to Khotan, Yarkend and across the Pamirs.

The northern or new road was opened in the period 1—5 A. D. and ran northwestwards from Tun-huang (or the old Yü-men-kuan outside Tun-huang) to Turfan, whence it may have followed the present trunk road via Urumchi to the Ili valley. It is said to have rejoined the Road of the Centre at Kucha. The course of this road between Yü-men-kuan and Turfan is absolutely unknown, and I have marked it on the map Fig. 4 only after much hesitation.

The present trunk road from Turfan to Qara-shahr and Korla cannot have been of any use for the through traffic with silk until after A. D. 127, the year when Yen-ch'i (Qara-shahr) submitted to Chinese power. But by this Tun-huang—Turfan road silk reached the Wu-sun in the Ili valley and around the Issiq-köl, and may have been forwarded westwards by the Wu-sun.

After the capture of Hami in A. D. 73 the present cart roads Anhsi—Hami and Tun-huang—Hami—Turfan were opened by the Chinese for a short period, but this part was very insecure as long as the Huns exercised any power south of the T'ien-shan mountains.

The Road of the Centre, which is probably of the same age as the southern one became by far the most important line of communication for the overland trade between China and the West from the end of the second century B. C. until the change in the course of the lower Tarim made it untrafficable sometime during the second

quarter of the fourth century A. D. In this connection we will consider only this middle branch.

In 1914, Sir AUREL STEIN succeeded in tracing the course of the ancient road between Lou-lan and the old Yü-men-kuan (situated NW of Tun-huang), i. e. the desert part of the Road of the Centre. It makes a detour to the north to avoid the largest expance of the salt-crust which marks the old extent of Lop-nor, but it has nevertheless to cross it for a stretch of about 30 km.

The route traced by STEIN was not the only possible one. A short-cut across the salt-crust along a line running SE—NW and followed by Mr. CHEN in 1931 (cf. the map Hörner 1935, Fig. 2) probably affords easier going than STEIN's route, because it touches several "islands" in the salt-crust. That it was used also in Lou-lan's time is made probable through the finds discussed on p. 168. Although even this short-cut has six waterless stages.

The Road of the Centre was the shortest of the three branches of the Silk Road. The advantage of its being shorter than the rest was lessened by the extreme difficulty of crossing such a wide waterless desert. Above all, the big petrified sea-bed with its hard salt-crust must have presented a terrible obstacle to all travellers and their beasts of burden. Nothing could be more dead than this desolate salt expanse. It is an absolute desert, from which every form of life is banished.

Not much experience of desert travelling is needed to understand that the only means of conveyance in ancient days must have been camels, and that the journey along the 190 km. long desert route found by STEIN was possible only in winter. In the hot season this route is and was absolutely impassable.

Some observations made by HEDIN during his motor trip through the southern hills of Pei-shan in the winter 1934—35 seem to point to the existence of now deserted roads in this mountain region. The northern branch of the Silk Road, which was opened in the period 1—5 A. D. passed through the Pei-shan region, and so do several roads running N—S between Tun-huang and Hami, and it may have been cairns of these roads that HEDIN came across. It is very likely however, that the caravans of ancient days, when travelling from Tun-huang to Lou-lan, followed some northerly route going inside the low Pei-shan ridges, where there may have existed some springs and even wells. Such a route was probably trafficable for a longer period of the year than STEIN's road. But even here traffic must have been practically nil during the hot summers — as is the case on all Central Asian desert distances of any length where rest-houses with provisions for the animals do not exist.

I am not sure that these desert routes were chosen just because of their shortness. Time was certainly of still less value 2000 years ago than it is now in this part of the world; and every sensible trader avoids deserts, if possible. When the big overland traffic started, the Hsiung-nu were blocking the more easily negotiated

roads along eastern T'ien-shan. The Chinese had consequently to choose a more southerly route, and thus the Road of the Centre came into existence.

To facilitate the desert crossing arrangements with advanced depôts NE of the Lou-lan station were made, and travellers, at least those of any importance, were met with supplies before reaching the first settlement at Lop-nor. The native Lou-lan people had to perform this task and they had also to serve as guides. They apparently misused their position and waylaid Chinese caravans together with the Huns and were thus a great obstacle to trade and traffic. Such events are described in Chinese records, and they forced the Chinese to deal drastically with the indigenous Lou-lan population.

As far as is known, the ruined watch-tower called L. J. formed the last station on the Lou-lan side of the salt-crust. At present there is still fresh water as far east as this point, and it is more than likely that the station L. J. was erected at the very last place where drinking water was obtainable in the days of the opening of the Silk Road. It served as a landmark for the travellers, it was the first (or last) place with supplies, and here was probably some arrangement for crossing the river.

At the fortifications L. F. and L. E. which are next met with on the straight road to Lou-lan station there must also have been river-branches, and the structures were certainly erected there for strategical reasons: to create an obstacle for enemies approaching along the main road, but also to facilitate the river-crossing for peaceful travellers and to furnish them with accommodation and supplies.

The position of T'u-ken near the northernmost source of fresh water is of importance in this connection as it protects the flank of the Silk Road from attacks from the north.

In time of peace the "through traffic" may have passed via L. J. to the north of the delta without touching the Lou-lan station and the fortifications in a line to the north-east of it. In this case T'u-ken would be one of the main stations between Yü-men-kuan and Ying-p'an.

From Lou-lan the road must have followed the bed of the lower Tarim (the present Qum-darya) passing Ying-p'an and then along the line of watch-towers to Korla. From there on, the ancient and modern highways cover each other practically the whole way to Kashgar.

When travelling by car between Korla and Bugur in 1934 I noticed ruined watch-towers in only three places along the road, and heard of a fourth, but there may of course exist more.

The first one stands on the western outskirt of the Korla oasis immediately to the south of the road. The second one lies a little to the east of the first one and to the north of the road. It is marked on STEIN'S map as a ruined post. The third

tower is situated on the NE border of the Charchi oasis. It stands on a 2 m. high platform and is itself about 4 m. high, the base being about 5 m. square. The construction did not reveal any details which could be used for determining its age. Judging from the far advanced decay of the structure it must be of considerable antiquity. We may guess that it was built in the period between B. C. 60 and the beginning of the first century A. D. when the Chinese Protector General of The Western Regions was residing in Wu-lei, which is identified with Chadir 45 km. west of Charchi, at a time when the traffic along the Silk Road was flourishing.

According to information from local people there is another ruined tower in Eshme, the small oasis between Charchi and Chadir.

B. LOU-LAN.

Lou-lan is the Chinese rendering of an indigenous name of a small kingdom comprising the region around lowermost Tarim. The first time it is mentioned is in a letter from MAO TUN, Khan of the Hsiung-nu, to the Emperor of China in B. C. 176. In some cases the name is written Lao-lan. In the documents in Indian Kharoshthi which have been excavated from ruins in the Tarim Basin, the name bears the form Kroraina or Kroraimna. A later form is Raurata. Prof. KARLGREN has kindly informed me that the old pronunciation of the name Lou-lan was *glu-lan,* which corresponds very closely to the Kharoshthi forms.

After having erected military bases at Chiu-ch'üan (Suchow) and Tun-huang the Chinese continued their expansion westwards. As the Lou-lan people maltreated the members of passing Chinese caravans a military expedition was dispatched to Lou-lan, and in 109 B. C. the king was forced to pay tribute to China.

Its geographical position gives to the Lou-lan kingdom a strategical importance far surpassing its importance in other respects. Stretching from the Quruq-tagh mountains in the north to the high range of Astin-tagh in the south, it serves as a key to the whole Tarim Basin, and from Lou-lan the rich Turfan Basin is also easily reached.

It is unnecessary to follow the ups and downs in the Chinese domination of the Lou-lan kingdom in this connection. These happenings have been recorded both by STEIN and HERRMANN.

Among the Chinese the name Lou-lan was changed to Shan-shan in the last century B. C., but revived for the naming of the military station founded by So MAI[1] about 260 A. D. (i. e. HEDIN's city of Lou-lan, STEIN's L. A. or Lou-lan station). It was also used as a name for the settlements around L. A. In the Kharoshthi documents we never meet the name Shan-shan, only Kroraina or Kroraimna, and it thus seems that the real name never changed, which is quite natural.

[1] So MAI, not So MAN, is the correct form, according to Prof. Giles (BSOS 6, p. 829).

CHAVANNES and HERRMANN are of the opinion that the capital of the Lou-lan kingdom was removed from the northern region of the Lop desert to Charkhliq in B. C. 77. The premiss for this supposition is a paragraph in the Wei-lio. STEIN on the other hand believes that the capital was situated in the southern part of the basin the whole time. According to GILES Miran was the old capital and Charkhliq the new one. Cf. p. 224 f.

I feel inclined to agree with the argument set forth by CHAVANNES and HERRMANN. The old capital may possibly have been more of a camp than a permanent residence, but on the other hand it seems most likely that the Lou-lan station was the main centre even before the arrival of the Chinese garrison.

HERRMANN has tentatively marked the site of the old Lou-lan capital on a map (Herrmann 1931, p. 57) 20 km. NNW of the Lou-lan station. This is certainly rather daring even with the wording "Hauptstadt? (unerforscht)".

This part of the desert has now been traversed by so many that all ruins of any importance are certainly known. Many other parts of the Lop desert, however, have never been visited and still less searched for ancient remains, and the discovery of such an imposing site as "ÖRDEK's necropolis" hints at the possibility of finding still more remains.

In the literature the name Lou-lan has been mostly used to denote the largest of the ruins found by HEDIN in 1900—1901. In this treatise I have followed STEIN in consistently referring to this ruin as the Lou-lan station in order to distinguish it from the Lou-lan kingdom.

STEIN has already pointed out how the establishment of a Chinese military colony in the Lou-lan kingdom is foreshadowed in a proposal to the Imperial Council by General PAN YUNG, the son of the famous PAN CH'AO, about A. D. 119. I quote the whole passage in the masterly translation of CHAVANNES, as the text is very typical and contains several details of interest (Chavannes 1906, p. 248 f.).

"Autrefois, dans la commanderie de *Touen-houang* il y avait une garnison de trois cents hommes; il faut maintenant la rétablir et instituer à nouveau un *hiao-wei* en second, protecteur des contrées d'Occident, qui résidera à *Touen-houang,* comme cela était autrefois pendant la période *yong-yuan* (89—104 p. C.); d'autre part, il faut envoyer un *tchang-che* des pays d'Occident, à la tête de cinq cents hommes, organiser une colonie militaire à *Leou-lan;* du côté de l'Ouest, (cet officier) dominera les chemins qui mènent à *Yen-k'i* (Karachar) et à *K'ieou-tseu* (Koutcha); du côté du Sud, il fortifiera le courage de *Chan-chan* et de *Yu-t'ien* (Khoten); du côté du Nord, il tiendra en respect les *Hiong-nou;* du côté de l'Est, il sera voisin de *Touen-houang.* Voilà ce qui est vraiment avantageux.

Un *chang-chou* demanda à *(Pan) Yong:* 'Si maintenant on établit un *hiao-wei* en second, quel en sera l'avantage? Si en outre on nomme un *tchang-che* pour faire une colonie militaire à *Leou-lan,* quel en sera le profit?' *(Pan) Yong* répondit: 'Autrefois, à la fin de la période *yong-p'ing* (58—75 p. C.), on entra pour la premi-

ère fois en communication avec les contrées d'Occident[1]; on commença par envoyer un *tchong-lang-tsiang* qui résida à *Touen-houang;* ensuite on institua un *hiao-wei* en second qui demeura à *Kiu-che* (Tourfan) et qui put donc être un administrateur pour les barbares tandisqu'il empêchait les Chinois de commettre aucun empiètement à leur préjudice; c'est pourquoi les barbares étrangers s'attachèrent à lui et les *Hiong-nou* redoutèrent son prestige. Maintenant, le roi de *Chan-chan, Yeou-houan,* est un descendant des Chinois par les femmes; si les *Hiong-nou* mènent à bien leurs projets, *Yeou-houan* mourra sûrement; or, quoique ces peuples soient semblables à des oiseaux et à des bêtes sauvages, ils savent cependant éviter ce qui leur est funeste; si nous faisons sortir (des soldats) pour constituer une colonie militaire à *Leou-lan,* cela suffira à nous gagner leurs coeurs. A mon humble avis, c'est une chose avantageuse'."

As we know, PAN YUNG's proposal was only partly effected in his time. Not until about 260 was a military colony established by SO MAI at Lou-lan, apparently identical with the Lou-lan station discovered by SVEN HEDIN.

2. *REMARKS ON THE HYDROGRAPHY.*

As the question of the hydrography of the lower Tarim is of paramount importance for the discussion of the archaeological remains in the Lop desert and the existence of the Silk Road I find it necessary to touch on this subject here.

HÖRNER has paid much attention to the hydrography of the lowermost Tarim and the new lake Lop-nor, and if I can make any statements that may constitute an addition to the present knowledge this is only thanks to HÖRNER's unreserved readiness to communicate his observations to me, for which I am deeply indebted to him.

The lowest part of the Tarim river has a fluctuating course. The large number of place names such as Yangi-su, Yangi-köl, Yangi-darya etc. (The new water, lake, river) is a confirmation of this. The instability is due to the level ground, the strong wind erosion, and the large amount of silt carried by the water until unloaded in the changing inundation areas serving as "clearing basins".

In itself this instability is not so remarkable. River branches in many other deltas where similar natural conditions prevail show the same tendency to change their beds. The instability of the Tarim possesses a particular interest as it has caused the ruin of a flourishing local civilization, and above all because it brought on a displacement in the course of the Silk Road. The river changes also become so obvious as they cause a shifting in the position of the terminal lake. As the volume of water is insufficient to fill the whole lake basin the lake has to shift its position

[1] The text is apparently incorrect here, as has been observed by Herrmann (1931, p. 93).

when the river course changes. The lake together with the lower part of the Tarim has therefore been compared with a pendulum.

We cannot follow all the minor changes in the river course, as there does not exist any map covering the whole region of the lower Tarim. Such a map can only be made from the air. It has been possible, however, to determine the major changes of the main water courses, especially thanks to Dr. HEDIN's untiring efforts.

The southernmost position, which the terminal lake of Tarim can occupy coincides with Qara-qoshun, and the northernmost position must nearly coincide with the present new lake Lop-nor. Between these southern and northern limits Lop-nor alternates. There have possibly existed intermediary stages, but we have no definite facts about them. Cf. the map Fig. 36.

It is hardly necessary to relate here how these river displacements were investigated, as a special volume of the Report series will treat the Lop-nor and the lower Tarim region. I will only summarize some main points bearing on the subject of archaeology and draw some conclusions.

During the latter part of the second century B. C. the main part of the joined waters of the Tarim and the Könche-darya had an easterly course, probably along what is now Qum-darya. The water apparently continued to flow thus until about 330 A. D. The latest dated document from Lou-lan bears the year 330 A. D., and it seems to mark the end of the Lou-lan occupation. It is very likely that the abandoning of Lou-lan was caused by a decreasing water supply in the Tarim of that region, i. e. the river had taken another course around that time. If this supposition is correct, we have here the first known displacement of the river.

Our knowledge of how the river behaved from the fourth to the nineteenth centuries is very limited. In historical records there is nowhere any mention of a revived Lou-lan. Certain observations made by STEIN, HÖRNER and myself indicate that the Quruq-darya bed carried water for at least one shorter period in relatively modern times (Stein 1921, pp. 359 sq and 386, 1928, p. 286; Hörner 1935 p. 152). Possibly that river course was also active some time between 600 and 1000, as indicated by the occurrence of some graves.[1] HEDIN noticed living poplars in two places and living tamarisks in one place near the then dry bed of Quruq-darya to the east of Yardang-bulaq (Hedin 1905, pp. 59, 61, 63). Subsoil drainage from Quruq-tagh may partly account for these phenomena, but it is also likely that a temporary wet period of Quruq-darya was the single cause of these signs of vegetable life.

In 1877 PRJEVALSKY discovered the Qara-qoshun lake in the southern part of the Lop-nor depression, a lake formed by the Tarim and the Könche-darya; during high water periods Charchan-darya was also a tributary to this lake. Until lately Qara-qoshun has played the rôle of ancient Lop-nor on the maps.

RICHTHOFEN objected to the identification of Qara-qoshun with the ancient lake

[1] The travels of the Nepalese HBAL RGYAL-SUM via the Lou-lan station would seem to have occurred during this period (Konow 1934, p. 138 f.).

Lop-nor on Chinese maps. On these the lake is placed in the northern part of the basin. HEDIN has further elucidated this question, and after having proved that Lop-nor must be an alternating lake which "wanders" he even predicted the return of the lake to a northern position. He could at that time scarcely have thought that his prophecy would be fulfilled during his years as an active explorer and that he himself was destined to follow so closely this last pulsation in the life of the river. Nature herself provided the proof of the correctness of his theory.

Around 1921 the last displacement of the lower Tarim and its terminal lake began. Dr. HEDIN was the first geographer to learn about this occurrence, when passing through Turfan in February 1928. At that time the displacement was completed, the joined waters of the Tarim and the Könche-darya following the old Quruq-darya bed (now bearing the name Qum-darya)[1] and forming a large lake on the big salt crust in the lowest part of the Lop depression.

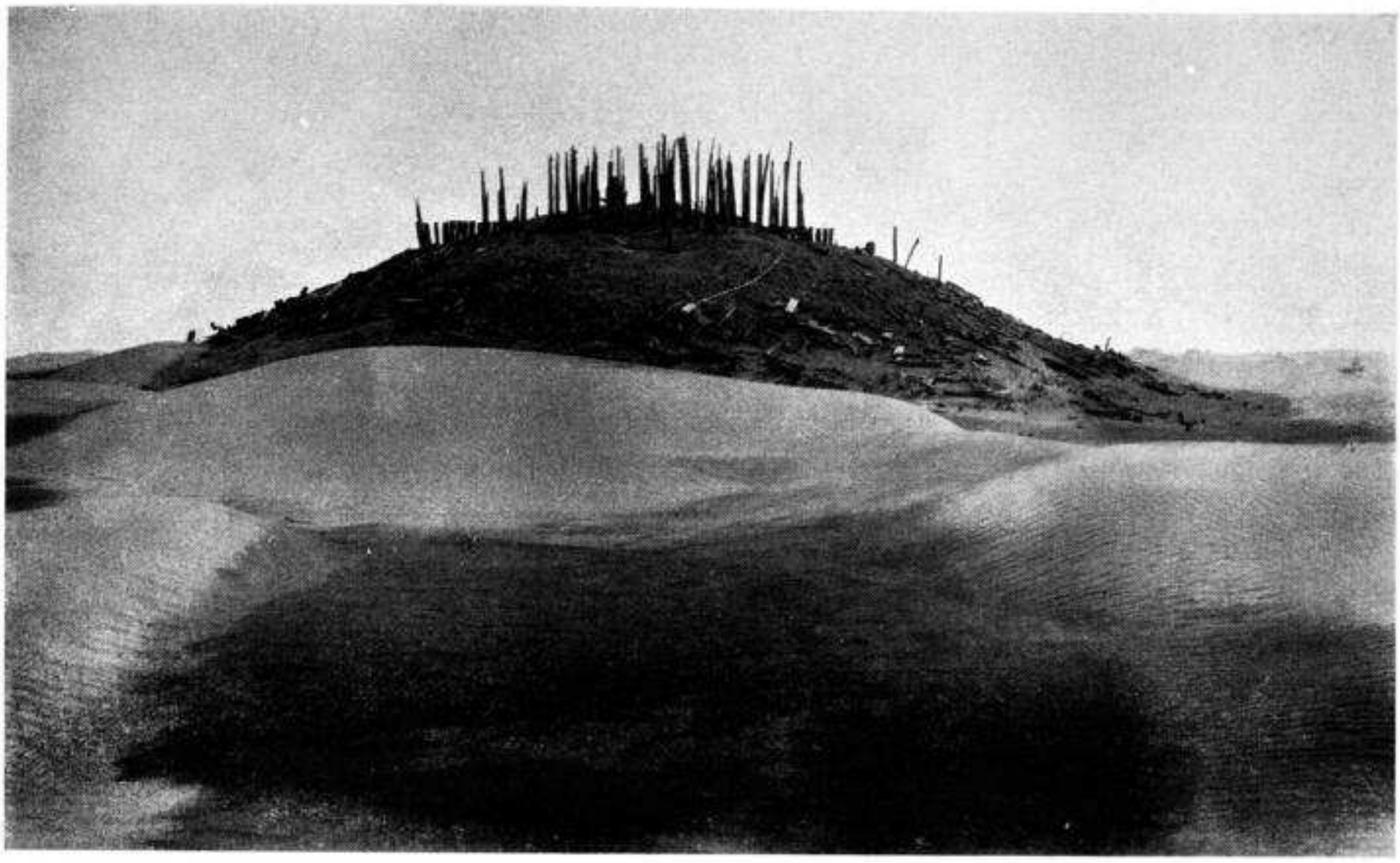
The shape of this new lake Lop-nor, according to HÖRNER, is that of a hanging bag measuring nearly 90 km. from north to south and having a width varying from about 14 to 45 km. Its surface covers some 1500 to 1800 square km.

HEDIN and HÖRNER have proved that because of the sedimentation and wind erosion the lower Tarim is bound to be a changing river, and Lop-nor an alternating lake. There are no traces of any late crustal movements that could have caused such changes in the hydrography of the region.

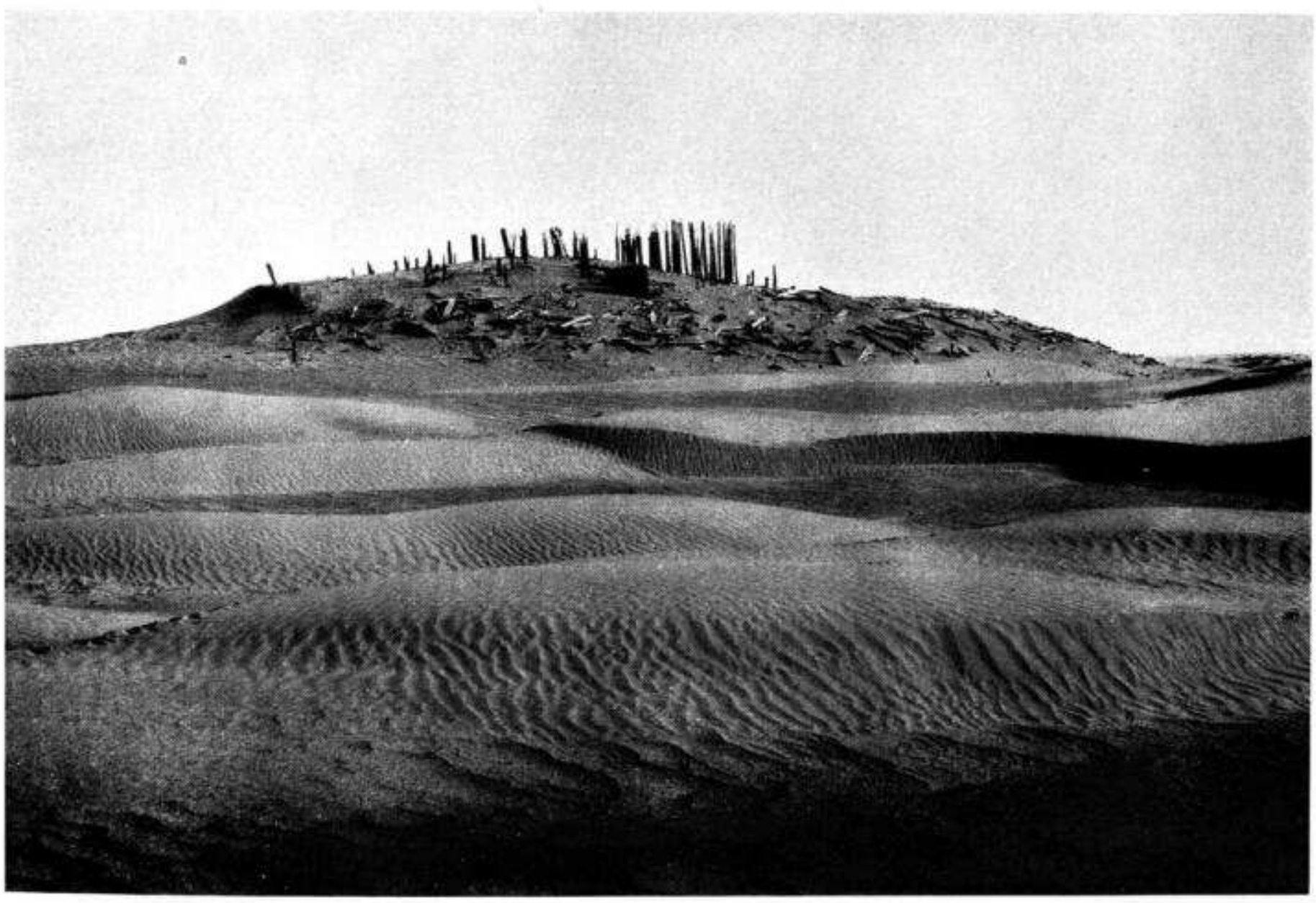
In the case of the last return of the whole volume of the Tarim to the dry bed of Quruq-darya human activities may have played a certain part. They were certainly not decisive but they may have accelerated the natural development, and in the eyes of the natives they have come to be regarded as the cause. STEIN writes as follows: "In 1914 I heard the Loplik at Abdal complaining of the construction of a new big dam above Tikenlik as the cause which had kept the summer flood of the Tarim from reaching their marshes" (Stein 1921, p. 422 note 28). When I visited Tikenliq, in September 1928, the local people talked about how the drying-up of Yarkend-darya somewhat above the height of Tikenliq was due to constructions of new canals a little higher up the river. The water in Chong-köl and its surrounding swamps may then have risen so high that more water than usual flowed over into Könche-darya, which because of this addition to its volume broke through at a weak point in its bed at Temenpu, from where it soon came to follow the old bed of Quruq-darya.

The volume of water in the present lower Tarim is subject to marked seasonal changes. Because of the flat ground these changes affect the extension of Lop-nor to a very high degree. Thanks to HÖRNER's mapping we know the approximate outline of Lop-nor during the winter season 1930—31. During other times of the year

[1] The name Qum-darya, or Sand River, is not new. It was recorded already by KOZLOV as a second name of Quruq-darya, which means The Dry River.



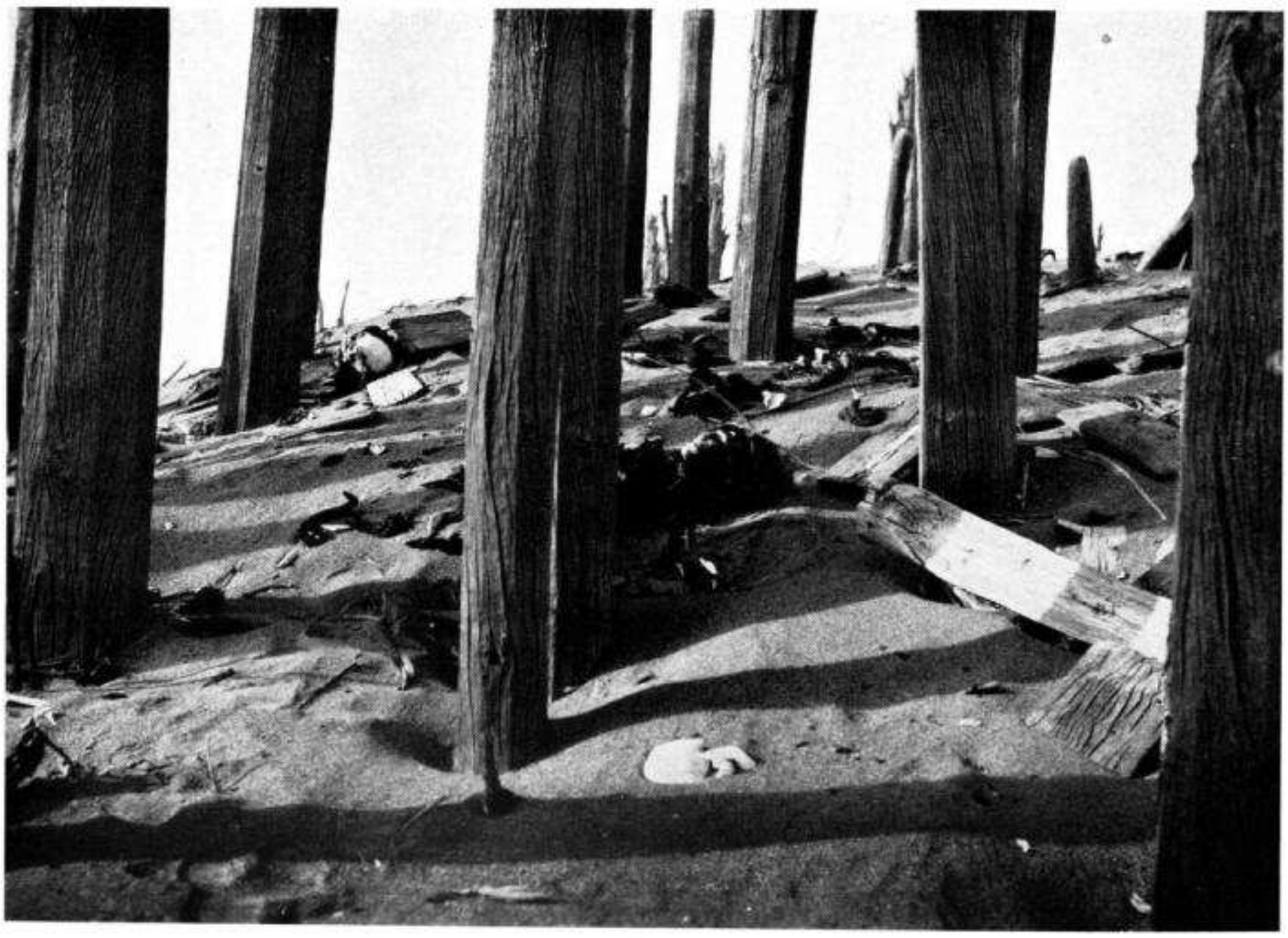
a. Cemetery 5 ("Ördek's necropolis") from ENE.



b. Cemetery 5. Total view from S 25° E.



a. Eastern part of Cemetery 5.



b. "The columned Hall of the Dead". Cemetery 5.

the configuration or at least the size of the lake may be quite different. However, the maximum extent of the terminal lake 1921—1930 is also fairly well known.

The lake Qara-qoshun, when still existing, was never so closely surveyed, and the outline of its eastern extremity was never determined.

In view of such changes in the extent of the lake it is very hard to determine the position of the water level at the time of Lou-lan, and matters are also complicated by human activities, especially irrigation in the delta region.

HÖRNER found at the salt terminal lake traces of a shore-line 0.8 m. above the water level at the beginning of 1931, and this shore may have belonged to the lake of Lou-lan's time or possibly to a post-Lou-lan lake. Other observations of his indicate that the water level in the Lou-lan oasis cannot have exceeded the present one in the same area by more than a metre or two, probably not that much.

The extraordinary physical conditions prevailing in the Lop desert create a good many relatively rapid changes in the morphology of the ground. Besides the major river changes occuring at intervals of centuries, there are other changes going on almost constantly.

The wind with the sand as the carving medium is forcefully grinding the dry clay or mud surfaces of the ground into deep hollows and trenches, leaving curiously shaped yardangs as temporary witnesses of an older land surface. After HÖRNER's investigations it is clear that the bulk of the fine sediments, so easily eroded by the force of the wind, is of a fluvial rather than a lacustrine nature.

As the strong winds almost constantly come from north-east and north-north-east, the loose material carried away moves in the same direction. In the south-western part of the desert, sand dunes are thus formed. The amount of such sand accumulations is bound to increase. From the distribution of stray finds from Lou-lan's time it is also obvious that the sand is so increasing.

The wind erosion in the northern part of the basin during a dry stage is of greater importance for the configuration and situation of the delta which will be formed when water returns than for the configuration and situation of the terminal lake then formed, because the salt crust where the last of the water evaporates offers an efficient resistance against wind erosion. The present new delta is very different from the delta of Lou-lan's time, and even when it has become old and "stabilized" it will remain different.

The river branches of the present delta show a very marked tendency to turn to the north-east. This circumstance is due to the fact that the wind-scoured troughs run in this direction. These troughs between the yardang-formations are of course much deeper now than 2000 years ago, if they existed at all at that time. It is therefore quite certain that the present delta does not cover exactly the same region as the delta of Lou-lan's time. The occurrence of numerous ruins and cemeteries in curious nooks and corners of the present delta also indicates that the delta was not so split up in numerous branches at the time of Lou-lan as it now is. By and by the

present delta will stabilize and become less intricate. No old forests exist in the present delta though there are some along dry river courses to the south of it. The Lou-lan station is still as dry as it was before the return of the water into Qum-darya, the nearest point where drinking water is obtainable being situated about 7 km. from the ruined station.

As to the situation of the lake Lop-nor of Lou-lan's time we know only that it must have been somewhere in the large salt-encrusted area.

STEIN rightly emphasizes the importance of the ruined fortress at Merdek when trying to reconstruct the hydrography of Lou-lan's time (Stein 1921, p. 453). The existence of a ruin here proves that a branch of the Tarim must have flowed close to the line of the Ilek (i. e. the easternmost branch of the old lower Tarim) during the earliest period of Chinese control of the Tarim Basin. This explanation is much more reasonable and presents itself more readily than HERRMANN's construction of a "River of The South" passing Merdek in a west-easterly direction. The river course assumed by STEIN need not have been very large, only something like my Small River. Under the present hydrographical conditions all the north-southerly beds of the lower Tarim are dry, the whole amount of water following the Qum-darya.

The correctness of STEIN's explanation of the source whence Merdek drew its water supply was endorsed by my discovery of "The Small River" in 1934. As will be described in detail in the following I found this narrow river course branching off from Qum-darya far above the true present delta, taking a south-south-easterly course, and probably never reaching a terminal lake. It approaches the now dried-up beds of the lower Tarim to within 8 or 10 km. The archaeological remains found along this branch prove that it existed at the time of Lou-lan. To a certain extent it must have flowed parallel to the branch which watered Merdek.

At the end of the chapter on ruins there is a further discussion on hydrographical questions.

*

In Lou-lan there existed a flourishing mixed culture during a few centuries around the beginning of our era.

This culture arose thanks to favourable geographical circumstances which gave Lou-lan a key position on the shortest line of communication between China and the West, the so-called Road of the Centre, a part of the Silk Road along which China exported above all her precious silk materials, and along which she received many cultural influences from Western countries, and from India, among other things, Buddhism. However, the life-giving water in the lower Tarim river, which alone made settlements possible here, changed its course and came to follow another bed. Lou-lan had to be abandoned. The desert spread its deadly hand over everything that the population had left behind when they moved away. Soon Lou-lan was

forgotten. Nobody seems to have settled in the central Lou-lan area since this time, which is highly important for the archaeologist as we thus get a reliable terminus ad quem. The aridity of the desert climate has, moreover, marvellously well preserved the remains of the forgotten Lou-lan, not only such easily perishable articles as textiles and wooden objects but also the dead in their coffins, and we are thus now able 1600 years after the fall of Lou-lan to behold the features of the people who lived there.

From a Chinese point of view Lou-lan is a remote border district and very provincial. In a wider context, however, Lou-lan has a significant chronological bearing. For this reason the present volume lays particular stress on Lou-lan.

3. *ANCIENT REMAINS ALONG "THE SMALL RIVER".*

A. INTRODUCTION.

In November 1933 Dr. SVEN HEDIN started from Kuei-hua-ch'eng, Sui-yüan, on a motor car expedition through the Gobi desert to Sinkiang. He travelled on behalf of the Central Government in Nanking, his task being to examine the possibilities for motor traffic along those ancient lonely desert trails that had hitherto been trodden by camel caravans. I had the extraordinarily good fortune to accompany the eminent explorer on this motor journey through the deserts and wastes of Central Asia as I had accompanied him in 1927—28 on camel-back.

His program also included a survey of the new course of the lower Tarim river in Eastern Turkistan and its terminal lake Lop-nor. This part of the expedition started in April 1934, from Könche or Yü-li-hsien, a small village about 45 km. SSE of Korla, whence Dr. HEDIN followed the river Könche-darya and its continuation Qum-darya, travelling in native canoes. In the course of his journey by water Dr. HEDIN met one of his former Turkish servants called ÖRDEK, then aged seventy-two, who had devotedly served him for several years around the turn of the century. In 1900, for instance, ÖRDEK had played some part in Dr. HEDIN's finding the Lou-lan ruins, a discovery which led to the archaeological surveys of the Lop desert. These ruins are still of outstanding importance as the principal archaeological site of the region.

ÖRDEK now told Dr. HEDIN how the Lou-lan discovery had inspired him to start a private tour of exploration, stimulated by the hope of finding fabulous treasures of gold and silver in the desert, a dream common to most natives living in Central Asian oases. Fifteen or twenty years ago (1914—19)[1] he had started eastwards

[1] Indications discovered recently make it highly probable that it was anterior to 1911.

from the marshy lake Avullu-köl (eastern part of lower Tarim) and in the sands between there and Yardang-bulaq he had come across a hill covered with "a thousand" coffins. Now the Turki expressions "one thousand" and "ten thousand" are not to be taken literally — numbers are very seldom definite among the Turks — they are only meant to express a large amount. The wooden coffins, he said, were piled on top of one another, and their interior was richly carved and painted. The well-preserved corpses were dressed in silk, and there was also some kind of writings on ornamented paper. He was absolutely sure of his statement as to the location of this marvellous burial place: 10 km. south of the Qum-darya at the height of Yardang-bulaq.

We certainly had considerable doubts about his description of the site and its contents, or, more correctly, we made the usual allowances for the fancies of the Turkish mind. Afterwards, indeed, it was easy to recognize how ÖRDEK mixed his fantastic tale with details that he had noticed and remembered from Lou-lan. We were too credulous, however, in believing his statement as to the situation of the place, we only doubted his ability to trace it after so many years. Otherwise the fanciful description sounded inviting, especially as no explorer had ever ventured into exactly that region.

ÖRDEK also talked about ruins of watch-towers which he had located, and both Dr. HEDIN and I got an impression that the facts hidden behind ÖRDEK's tales, when properly examined, might help to widen our knowledge of the Lou-lan civilization and, maybe, also clear up some questions about the course of the ancient Silk Road, the latter problem being of special importance as Dr. HEDIN had long hoped to be able to survey the possibility of reviving the Silk Road for motor traffic, and had in fact made it one of the tasks of this last expedition.

I was therefore told off to locate and survey the ancient remains known to ÖRDEK. He was to act as guide. Fortunately, Mr. GEORG SÖDERBOM was sent with me on this special tour, and as always he proved to be of invaluable assistance not only in making all the practical arrangements, as will be seen from the following account.

On April 29th 1934 SÖDERBOM and I started from the main camp of the expedition, which was situated near the easternmost extremity of the Charchaq hills on the left shore of Qum-darya and about 19 km. W. of Yardang-bulaq, on our search for ÖRDEK's sites. We sailed down Qum-darya to a point about 4 km. below Yardang-bulaq which became our camp B 61. The spot was selected by ÖRDEK as a suitable starting-point for his reconnaissance. His searches were much hampered by severe sandstorms, and during those days on which I went with him or reconnoitred alone to the south of Qum-darya I obtained a very vivid impression of the dull monotony of the sand dunes and confusing maze of yardangs and dead tamarisk mounds. The region is far from easily investigated. On these tours I picked up small bronze and flint objects of various kinds as well as some potsherds, and

Örděk and his companions did the same. These objects are described as Nos. 11—29 in the lists on pp. 171 f.

The burial site which Örděk at the beginning of the tour described so vividly could not be found. We moved higher up the river again and made lake Pataliq-köl our new starting-point. This is a freshwater lake near to the south of Qum-darya and connected with it by a narrow channel. Our camp here bears the number B 64.

It soon became evident that Örděk was unable to locate the burial site. As time went on he contradicted himself more and more, and even had resource to supernatural powers to explain the "disappearance" of the cemetery, so that I began to regard it as existing only in his fancy. Söderbom, however, with his shrewd understanding of Central Asian mentality, refused to abandon the chase. He finally induced Örděk to begin searching from the south, i. e. from the old course of the lower Tarim, from which he had started out when first visiting the place, and he also succeded in persuading Örděk to associate with some other Turks, which he had been unwilling to do before. Without the clever aid of my old friend Georg Söderbom the burial place migh have remained an unsolved riddle hidden in the desert.

It would take too long to recount all that happened here. Suffice to say that we spent nearly one month searching for the main burial site.

Before Örděk returned from his last reconnaissance, on which he finally located the main site coming from the south and guided by some shepherds, we learned from other shepherds, who had recently reached Qum-darya from the south, that there existed a few graves near the river. They were said to be situated still higher up, not far from the main camp of the expedition, the first one near a small lake called Yarliq-köl. In the field this grave was designated as Grave A, and as such it is treated in my preliminary paper (Bergman 1935 a, p. 58 f) but it has subsequently been found convenient to call it Grave 10.

B. EARLIER DISCOVERIES OF GRAVES.

Before discussing the individual graves it is appropriate to give a brief account of the surveys of graves that have been undertaken by previous visitors to the desolate Lop-nor wastes.

Ellsworth Huntington was the first to observe the presence of ancient graves in the Lop desert. When, in January 1906, he travelled from the Lou-lan station westwards he found a grave in the zone of piedmont gravel close to the north of the then dry bed of Quruq-darya. He made no excavations, however.

Thorough excavations were undertaken by Sir Aurel Stein in 1914, when many cemeteries were discovered containing different kinds of graves. The one grave

found by HUNTINGTON is identical with STEIN's L. T. The collections brought together from STEIN's graves are rich and varied; in particular, the extraordinarily fine textiles with their marvellous colours and patterns have aroused great interest among students of textiles as well as among those interested in Chinese and Central Asian art in general. Their fundamental importance has only been increased by the discoveries of contemporaneous textiles in other places in Inner Asia, notably at Noyan-ola.[1] Altogether STEIN found eight cemeteries containing over fifty single graves and ten mass-graves, with many individuals in the latter. There will be occasion to make frequent reference to STEIN's graves in the following chapters.

In 1931, Dr. ERIK NORIN of our expedition made a rapid search of STEIN's cemetery L. H. and recovered two complete pottery jars. Unfortunately they were lost during the transport through Siberia together with a large amount of my own maps from Sinkiang. On a mesa in the neighbourhood of his camp 485 NORIN saw a tomb with a skeleton and rags of a coarse garment. It had probably been opened already. There were no traces of any coffin. If this is not identical with one of STEIN's graves, which has been marked in the map Fig. 37 2.8 km. WSW of L. J., it must be very close to it.

A few kilometres to the west of the same camp NORIN's servants collected for fuel a donkey's burden of thick branches from some dead fruit trees.

The Chinese archaeologist HUANG WEN-PI, also a member of. Dr. HEDIN's expedition, in 1930 found graves in three places near the northern part of the Qum-darya delta, and some of them he apparently examined. Judging from his written report to Dr. HEDIN, there ought to be an autochthonous tomb about 6 km. WSW[2] of the ruin T'u-ken (in the same region he found bronze arrow-heads, pottery and stone implements). About 10 li W of this place there are several graves, and about 60 li WSW from there another grave (mass-grave?), the last-mentioned being situated 8 li NW(!) of the river. His locations are far too brief and uncertain to allow of any identification with known sites, and his distances are much exaggerated. In one instance 70 li of his must correspond to about 12 km. instead of 30—40 km.

When HÖRNER and CHEN surveyed the new lake Lop-nor and the Qum-darya delta, they located graves on two mesas, all more or less destroyed by age, but they did not undertake any excavations.

HÖRNER's first burial place is situated 5 km. N 30° E of his camp 79 in the delta, i. e. about 29 km. NNE of L. A. and 9 km. WNW of L. E. A leg of a pottery *Ting* tripod was found there (K. 13392). On the map Fig. 37 it bears the number 392.

[1] This transcription is more correct in English than the Russian form Noin-ula.
[2] This position is according to my own deductions.

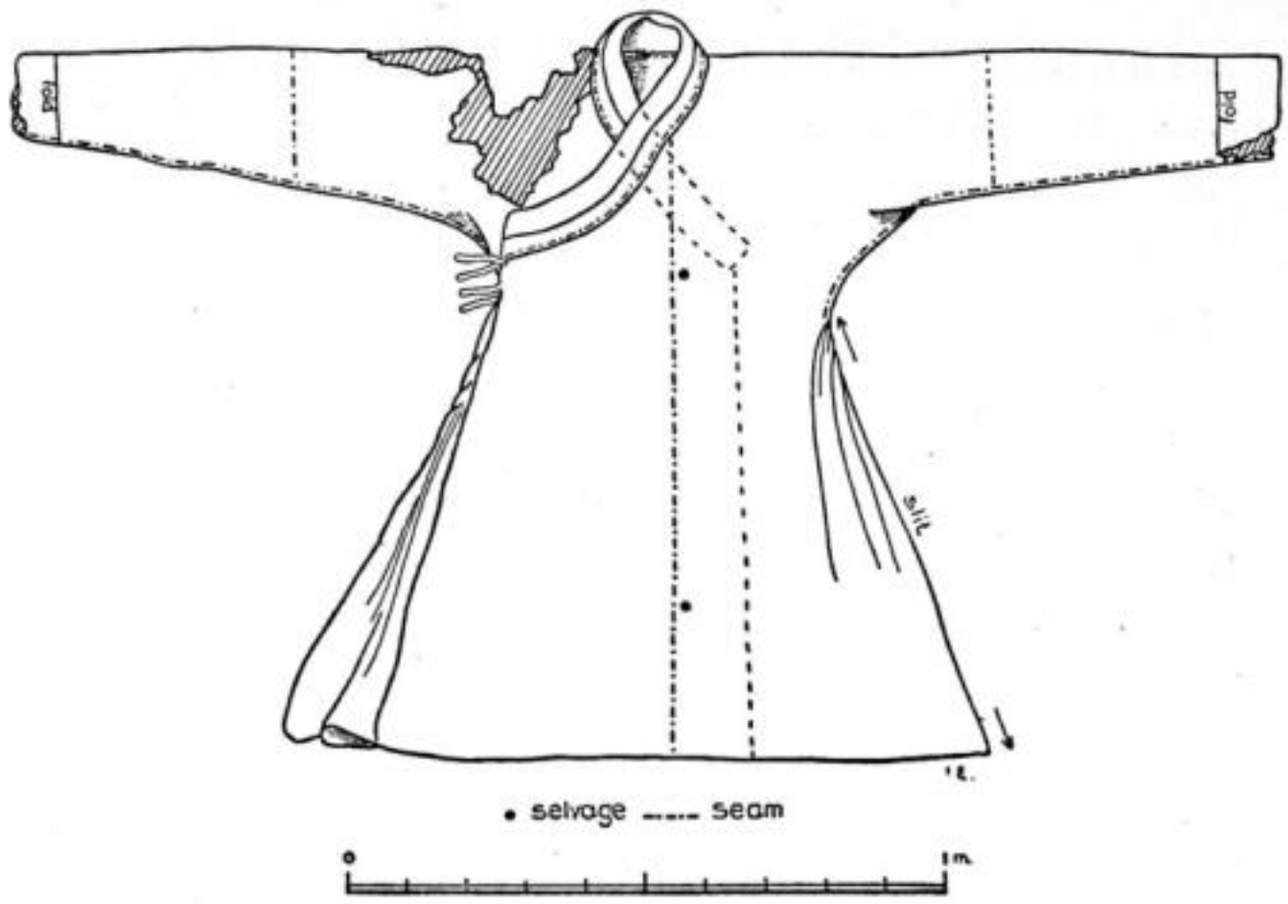


Fig. 6. The silk coat from Grave 10 (dotted line = the overlapped part of the coat).

His second place was on an imposing mesa called LM 3 near his camp 80, i. e. about 2 km. to the west of STEIN's castrum L. E. There were three square pits in the ground, two of which might have been gravepits as they measured 2 × 2.8 and 2.5 × 3 m. Beside an open coffin of poplar wood, measuring 2 × 0.5 m., there was a fragmentary coffin, and some thick boards, probably from other coffins. HÖRNER observed some dark potsherds on the surface of the ground. This burial place is marked 390 on the map Fig. 37.

On the higher part of the same mesa he found remnants of a cave, which will be discussed in connection with the other ruins, cf. p. 155.

All the previously known graves have been found in the region of the present delta and along the northern side of Qum-darya.

I shall now proceed to deal with the burial-grounds discovered by myself in 1934.

C. GRAVE 10.

Grave 10 is situated near the southern bank of Qum-darya some few kilometres above our main camp, i. e. about 20 km. to the west of Yardang-bulaq and close to a small lake called Yarliq-köl. The coffin had fallen out of a yardang. The photo Pl. II c was taken on our arrival; the hollowed-out poplar trunk that formed the coffin had then been a little broken up by ÖRDEK, the corpse being thus partly exposed. The hollow trunk was 2 m. long, and the open ends had been closed with oval lids made to match the openings and fastened by small converging dowels. All knot holes in the wood were filled with plugs. The inside of this primitive coffin was lined with thick felt. I had the impression that the felt was a lining for the coffin rather than a wrapping for the dead.



Fig. 7. High boot worn by a "Tokharian" on a fresco painting from Bezeklik. (v. Le Coq: Chotscho, Pl. 22.)

The body was that of an old man measuring only 1.48 m. It was mummified; only a part of the skull had lost its skin. On the left side of the back of the head a tuft of grey hair was twisted into a knot behind the ear. The incisors were much worn, the lower molars were missing, and in the upper jaw there were thirteen teeth in all. The skull was rather small, and seemed to be dolichocephalic.

The mummy was dressed in a long coat of yellow-brown undyed silk of the same twill weave all over, and lined with coarse cotton fabric in tabby weave. The overlapping front part was laid to the left, though it was made to be fastened with a ribbon on the right side below the sleeve. The long sleeves reached down over the hands. On the left side there is an open slit fram the lower edge to the waist. For details see the drawing Fig. 6.

The trousers were of sheepskin, the wool turned inside, reaching a little below the knees, and having a string running through cut openings round the waist. He wore no shirt.

The foot-gear consisted of high leather boots and felt socks. The boots, Pl. 6: 3, are heelless, with pointed toe, and made to fit either foot. The boot-legs are high in the front, where there is a strap which has been used to tie them to the knee and thus keep them in place. At the middle of either side a vertical seam runs from top to sole, a detail not found in modern boots but used in mediaeval times and occurring on the Bezeklik frescos as worn by Tokharians and Persians (?) Fig. 7; they are also fastened with a cord or strap in front (Le Coq 1913 Pl. 33 and 38 b show the same construction). A painted panel from a house in Dandan-öilik shows a man in Persian dress with boots of similar cut (Stein 1907, Pl. LXI). The long vertical seam is found on a Russian boot from the 16th century (Fornvännen 1931, Fig. 23), on a relatively modern Bokharian boot with high heel (Olufsen, p. 473), and on Yakut boots (Jochelson, Fig. 40 a—b).

Near the left knee was attached a triangular piece of brown felt on one side of which were fastened the bones of a sheep's foreleg, apparently a little charred. The felt is shaped to imitate the flesh of the foreleg, Pl. 6: 2, and the whole object is no doubt meant to represent provisions for the dead man. Two vertebrae of a fish were also found.

Immediately below the right hip, and under the coat, the felt doll Pl. 6: 1 was fastened with the strings still attached to its waist. The doll probably had its features painted on the piece of light stuff that is sewn to the front of its head. It no doubt represents a woman, and was presented to the dead man as a symbol of a feminine companion. For similar phenomena cf. pp. 110 and 137.

We have very few clues by which to date this burial. One of the Miran graves has exactly the same kind of coffin, Fig. 52, but this circumstance is of no real significance. To date it within the same chronological limits as the other Lop-nor

graves would a priori seem justified, but it has nothing in common with the rest. There is, moreover, one circumstance that points to a somewhat later time than that of Lou-lan. We know that the width of the silk woven in Han time and immediate post-Han was very nearly 50 cm. and that this width was kept fairly constant, there are several examples of this in the silk materials in this collection. Now the width of the silk used in the coat in Grave 10 is 60.5 cm. We do not know exactly when the width of silk was increased above the Han standard, only that it probably happened sometime between the end of the Lou-lan period and an early part of the T'ang dynasty. On the other hand, it is certain that this burial is pre-Mohammedan, i. e. previous to the 10th century. It has possibly some connection with the unexamined graves around Yaqinliq-köl to be mentioned below.

LIST OF ANTIQUITIES FROM GRAVE 10

10:1. Man's coat of undyed silk twill, lined throughout with undyed cotton fabric in tabby weave. Silk six-leafed warp twill. Full width 60.5 cm. Fabric alternately on right side and back, according to selvages. Cotton fabric rather coarse. Full width 39.5 cm.

The coat is cut in kimono shape over the shoulders, the material being all in one from the lower edge of the front pieces to that of the back. The back has a middle seam; broad front pieces, biased over the chest, are crossed as far as the side seams, right under left. The right front piece has a ribbon of cotton fabric attached, to be tied with another ribbon fastened inside the left side seam. The left front piece has been tied with two pairs of ribbons, remaining in the front piece, with a corresponding ribbon at the right side seam on the exterior of the coat.

The lower part of the coat has an open slit as far as the waist at the left side. A wide piece at the slit is joined to the front, lying under the back piece, which covers is. Both front and back are biased outwards and downwards.

Within the slit are several pleats. The lower part of the coat is sewn together on the right side. Several inserted pleats and biasing here add to the width. The sleeves, having reached over the hands, are biased from the wide armpits towards the hands. Each sleeve is joined right across towards the middle. At the wrist is a small fold turned in, 7.5 cm. on right, about 9 cm. on left, forming a kind of cuff.

Around the neck, along the biasing of the front pieces is a strip, 7 cm. wide, divided by a fold, towards the neck 3.3 cm. wide, towards the coat 2.7 cm. wide.

The lining on the whole follows the cut of the outer material. Fig. 6.

10:2. Pair of high leather boots, made to fit either foot, the toes pointed. The legs much higher in front, where pieces of leather straps are still preserved. The side seams run from top to sole. The vamp is joined to the leg with a horizontal seam ending at the side seams. The sole consists of two layers of leather, joined to the upper with a sandal-seam (i. e. the upper being turned outwards and sewn direct on to the sole). Other seams are turned in with an inserted strip of leather along the seam. The top edge of the leg is finished with a folded strip of leather. No heels. One boot repaired at lower part of the foot. The shape of the foot is now somewhat deformed as the leather has dried. H. 52—53 cm. L. of sole 26—27 cm. W. of sole 6.5—7 cm. Pl. 6:3.

10:3. Doll of brown felt, made of two pieces sewn together and stuffed. Over the front of the head a piece of coarse fabric is sewn on. Round the waist is a cord of brown wool, which has been tied on to strips of dark brown, coarse fabric. Small attached piece of hide with the hair left on indicates puberal hair. Pl. 6:1.

10:4. Nearly triangular piece of brown felt with cast seam round the edge. On one side, bones of a sheep's foreleg are fastened with rough strings. The bones may be a little charred. 43×29 cm. Pl. 6:2.

10:5. Four small bones, probably from —:4.

10:6. Two fish vertebrae.

D. GRAVES AROUND YAQINLIQ-KÖL.

About 7 km. west of Grave 10 I was shown another burial place situated between the lake Yaqinliq-köl and Qum-darya, a couple of kilometres to the south of the latter. On top of a small yardang were the remnants of a rectangular structure 2.3 × 1.6 m., made of horizontal logs piled up between four corner posts, Pl. I a. At each end of it was a less distinctly marked rectangle, and in one of them parts of a child's skeleton were exposed. The middle part had had a roof of logs, which had now fallen in. The orientation of the structure was N 24° W—S 24° E. At the northern end stood two poles, each bearing an antelope head, probably denoting that we had to deal with a Mohammedan burial place. ÖRDEK confirmed this view, though he was ignorant of its age or to whom it belonged. The wood in the logs was certainly much weathered, which revealed a certain age, but as the structure did not resemble any of the graves of the Lou-lan time known to me, I was quite convinced of its Mohammedan character, and I therefore left the place untouched in order to avoid creating ill-feeling among the local people.

I have since learned that Ural-Altaic peoples, whether Mohammedans or not, put up animals' skulls on graves, and that this custom is apparently of considerable age and not necessarily associated with Islam. The use of horns of argali and ibex as offerings on Mohammedan tombs in our own day may be a survival of this custom. I therefore feel more and more inclined to believe that this burial place is of greater antiquity than I ascribed to it when on the spot.

Near to the east of Yaqinliq-köl I was shown another place said to contain a grave. The only thing to be seen on the dry tamarisk mound which was indicated as the place was the skull of a horse wound round a couple of times with ropes.

A little higher up the river, and close to its right shore, 8—9 km. NW of the grave shown in Pl. I a, Mr. CHEN found another grave. It was situated on the flat ground. The greater part of a coffin was exposed, and it was surrounded by upright poles. It did not resemble the graves seen by Mr. CHEN in the delta of Qum-darya.

Grave 10 and this group of tombs seem to be younger than the Lou-lan occupation, and they may all be pre-Mohammedan. For Grave 10 I suggest the approximate date 600—1.000, and the three graves around Yaqinliq-köl may possibly fall into the same period. If we accept this supposition we have to draw the conclusion that Qum-darya carried water sometime during this period, and for a sufficient length of time for people to come and settle here.

It is useful to draw a modern parallel. Qum-darya has by now carried water for 17—18 years. Nowhere along the desert part of it are there so many settlers as among the numerous winding river branches and small lakes around Yaqinliq-köl and Qum-köl where "The Small River" branches off. It is the good grazing (but only partly the fishing) that has attracted the shepherds from the old course of Tarim to move hither with their herds during the summer months. I heard of no "sum-

mer residences" below Yaqinliq-köl, but shepherds used to wander even east of the meridian of Yardang-bulaq. It is still too far for them to move to the delta, where grazing, certainly, is good. If the present hydrographical conditions get stabilized and remain so for sufficient length of time, the delta region will be resettled. Should the river change again in our time the Lou-lan region will remain untouched, whereas the ground around Yaqinliq-köl and The Small River will preserve traces of the present occupation to future archaeologists. This region around the branching off of The Small River apparently offered about the same natural advantages to human settlers in ancient times as it does now; but ancient settlements here, sometimes between 600 and 1.000, do not necessarily mean the existence of settlements around Lou-lan at the same time, and nothing in the archaeological collections indicates this.

E. FROM GRAVE 10 ALONG "THE SMALL RIVER" TO CEMETERY 5.

Between Grave 10 and Yaqinliq-köl we passed over eroded clay ground with low yardangs, dry tamarisk cones, and, in the moist depressions near the river, fine reeds. The route lay to the north of three small lakes in depressions at least 6 m. deep, Pl. V b, their water being of extreme salinity. The largest was about 1500 m. long, and between 100 and 500 m. wide. Between the two first lakes the ground had a thin covering of sand. In the same place there were dry poplars and low remains of tamarisks; all the trees had died when quite young, and most of them were still standing, Pl. II b. In one place a group of eight old, seemingly dead, poplars had fresh green leafs.

Between the last salt lake and Yaqinliq-köl there is a riverlike depression running about N—S, with small pools and reeds in the bottom, probably a bag-shaped extension of Qum-darya. One of our men called it Ara-tarim. No continuation of it was found further south. A belt of slightly salt-encrusted sand where I noticed potsherds of a neolithic character, separates this depression from Yaqinliq-köl. This freshwater lake, which communicates with Qum-darya, extends in a N—S direction and is of very irregular shape on account of the numerous reed beds. Its length is about 4 km., the width hardly exceeds 2 km.

Near the eastern shore there is a s a t m a or reed-hut, where SAIT MOLLAH and his family has been spending the summer for the last four years. In winter they live at the now dry part of the lower Tarim. Owing to the drying up of lower Tarim the settlers there have had to abandon agriculture and turn exclusively to a pastoral life. As we had occasion to observe, the neighbourhood of The Small River and the southern shore of Qum-darya had good pastures, which were utilized by the settlers along the lower Tarim. Even before the last river-displacement cattle- and

sheep-breeding was of importance along the lower Tarim side by side with fishing and agriculture.

Turning to the south we passed the southern end of Yaqinliq-köl and entered an area of small dunes, 2—4 m. high, and created by NE winds. Single dead tamarisk cones, and a very few dead poplars broke the monotony of the flat desert.

3 km. S of the southernmost part of the lake I found a small bronze knife (Pl. 30: 11), a couple of potsherds, and an iron fragment on a clay surface that was free of sand.

After proceeding 6 km. we touched the eastern border of a reedy marsh, 2—3 km. wide, and with an extension in NNW—SSE. It was called Qum-köl. At high water the pools and lakelets were said to form a river course of some size. This was our first encounter with what I call "The Small River".

Later on in the summer of 1934 Mr. PARKER C. CHEN mapped the southern shore of Qum-darya, and he then discovered how The Small River branched off from Qum-darya about 12 km. above Yaqinliq-köl, forming an intricate system of lakes and marshes, one of its branches being in direct communication with Yaqinliq-köl. (Cf. the map Fig. 36.)

Our route continued through the dune area to the east of The Small River Pl. II a, the dunes being 6—10 m. high. Along this part of the route a Turkish servant picked up the beautiful jade axe Pl. 5: 16, the largest axe known from the Lop desert. After 11 km. we reached a s a t m a, which served as the summer abode of another Turkish family. Here the river makes a couple of bends eastwards. We crossed the river for the first time, the bed being hardly 10 m. wide, but it was surrounded by small irregular lakes and reedy marshes which robbed the stream of much water; and there may be other branches which we did not touch. Young tamarisks were growing abundantly, and grass and reeds afforded excellent pasturage.

Less than 3 km. due south of the last-mentioned s a t m a there is another one belonging to a young able Turk bearing the name ABDURAHMAN. From his place onwards the river seems to follow a single bed for several kilometres. The water was running fast over small thresholds in a bed not exceeding 10 m. in width.

About 2 km. SSE of ABDURAHMAN's place the dune area, for a short distance, closes in on both sides of the river. After that we traversed big expanses of mixed reeds and tamarisks; two abandoned s a t m a s were passed. The river was lost sight of on our left. About 12 km. due SE of ABDURAHMAN's place we reached another Turkish settlement situated at a small lake called Pataliq-köl; it was fed by the river and had many curiously winding bays, as seen in Pl. X a, a photo which also clearly shows the high-water marks on the muddy shores.

From there the river takes a southerly course for 10—11 km. with sand dunes on both sides at a distance not exceeding 1 km. Burial place 4 — to be described presently — is situated on this part of the river "valley", and near to it we found the

better part of a large pot of red earthenware (Fig. 8), several other red potsherds recalling Han ware and the fragmentary hair pin of bronze No. 3: 1.



Fig. 8. Upper part of earthenware jug found near camp B 69, 1/6—34. Largest diam. 38 cm.

Near to the north of burial place 6 the river turns eastwards for 3 km. but regains its southerly course at a place called Qosh-yaghach, where remains of old reed beds were to be seen. Here we made our base camp, as this was the nearest water to ÖRDEK'S burial ground, cf. map. Fig. 18.

On the evening of June 2 we started from here for the cemetery, taking a north-easterly course, across crescent-shaped sand dunes from 1 to 2.5 m. high. Near the river there was a place with exposed clay, but otherwise the ground is completely covered with sand; the dunes consist of a fine-grained, greyish-yellow sand, on the flat surfaces this sort of sand is overlaid with a thin layer of coarse, red sand forming larger ripples than the other kind (see foreground of Pl. III b).

F. CEMETERY 5.

("ÖRDEK'S necropolis").

I. Description of the site.

The cemetery that had been so long sought for was found to be situated 4 km. from the water of The Small River, on a smoothly rounded hill, rising as a well-defined landmark above the otherwise flat desert, the monotony of which is broken only by the elegantly shaped sand dunes, and a few scattered hillocks with living tamarisks. As one approches the hill, the top of it seems to be covered by a whole forest of upright t o g h r a q[1] trunks, but standing too close together and being too straight to be dead trees. They were presently found to be erect posts with the tops splintered by the strong winds, Pl. III.

On the surface of the hill, particularly on the slopes, there were a lot of strange, curved, heavy planks, and everywhere one stumbled across withered human bones, scattered skeletons, remains of dismembered mummies, and rags of thick woollen materials, Pl. IV b. Some of the mummies had long, dark hair and well preserved faces. From others a ghastly-looking skull grinned out of a partly preserved blackened skin. The burial site made a most macabre and strange impression.

The hill consists of a large yardang or mesa, which is completely covered with drift sand. The crest is simply a sand dune that has become stationary, and the sand is still accumulating between the close-standing posts. The top of the hill is now 7 m. above the surrounding ground, its area is about 70 × 35 m., and its

[1] Toghraq is the Turki word for the wild poplar.

longer axis lies N 60° E—S 60° W, i. e. in the direction of the prevailing hard winds.

The western extremity of the hill is bordered by a slightly curved palisade of thin, not very straight poles, seen in Pl. III b to the left. A little to the east of the crest of the hill runs another palisade or stockade made of thick round posts with the tops all at the same level. The central part is sand-covered. Pl. III a, IV a and VIII a show different aspects of this structure. Close to the base these logs are kept together by horizontal bars fixed to them by means of strong bast ropes.

The small western palisade apparently served as a boundary of the burial place, but the function which the big palisade running across the hill once fulfilled is less evident. Was it meant ta separate different groups of graves?

Immediately to the east of the big palisade the free posts stand pretty close together, almost all of them very high, on an average 4.25 m., and of uniform thickness, about 25 cm. in diam. All of them are polyhedric, with 7—13 surfaces, Pl. IV b. When the sand is removed around the base of the posts they are found to be painted red. All the colour of the exposed part of the posts has of course disappeared. Once, however, this "Columned Hall of the Dead" was glowing in bright red colour. The wooden monuments were certainly painted not so much for æsthetic as for magic reasons, red being the colour of blood, i. e. life. Red ochre was used.

The poles to the west of the big palisade are more irregular as to height, thickness and shape, Pl. VII c. A few of them have a diam. of up to 50 cm. The topmost part of most of them is thinner than the lower part, there being a marked step between the two parts, clearly visible in Pl. VII c. A couple of them are pointed or tapering.

An interesting feature is the oar-like monuments, many of which still stand on their original sites, some are completely buried in sand, whereas fifteen have fallen down on the sides of the hill, cf. Pl. IX b in the foreground, and Fig. 10. There are examples with exaggeratedly large oar-blades, such as Fig. 10: 3, and those just referred to in the photographs, and others with more normally proportioned blades, Fig. 10: 2, 4. Below the blades there is usually an ornamental belt of engraved horizontal lines, once painted red. The type of Fig. 10: 3, for instance, may be compared to some extent with the oars used by the Lopliqs of to-day, whereas such a type as Fig. 10: 2 is quite different. In any case the occurrence of these oars shows that the people buried here used to row.

The easternmost part of the hill is nearly flat, and has only one upright post. It is the only one standing with ornaments of horizontal grooves, about 1 cm. wide, cut at regular intervals (cf. Pl. IV a on the left of the photo). Others of a similar kind have probably been placed there, since four or five are lying lower down the slope.

Örbek told me that when he visited the place on the previous occasion, about twenty years ago, there was a kind of hut or house on this flat part of the hill. Its walls and roof were made of planks. The latter had been covered with ox-hides and



Fig. 9. Plan of Cemetery 5 ("Ördek's necropolis").

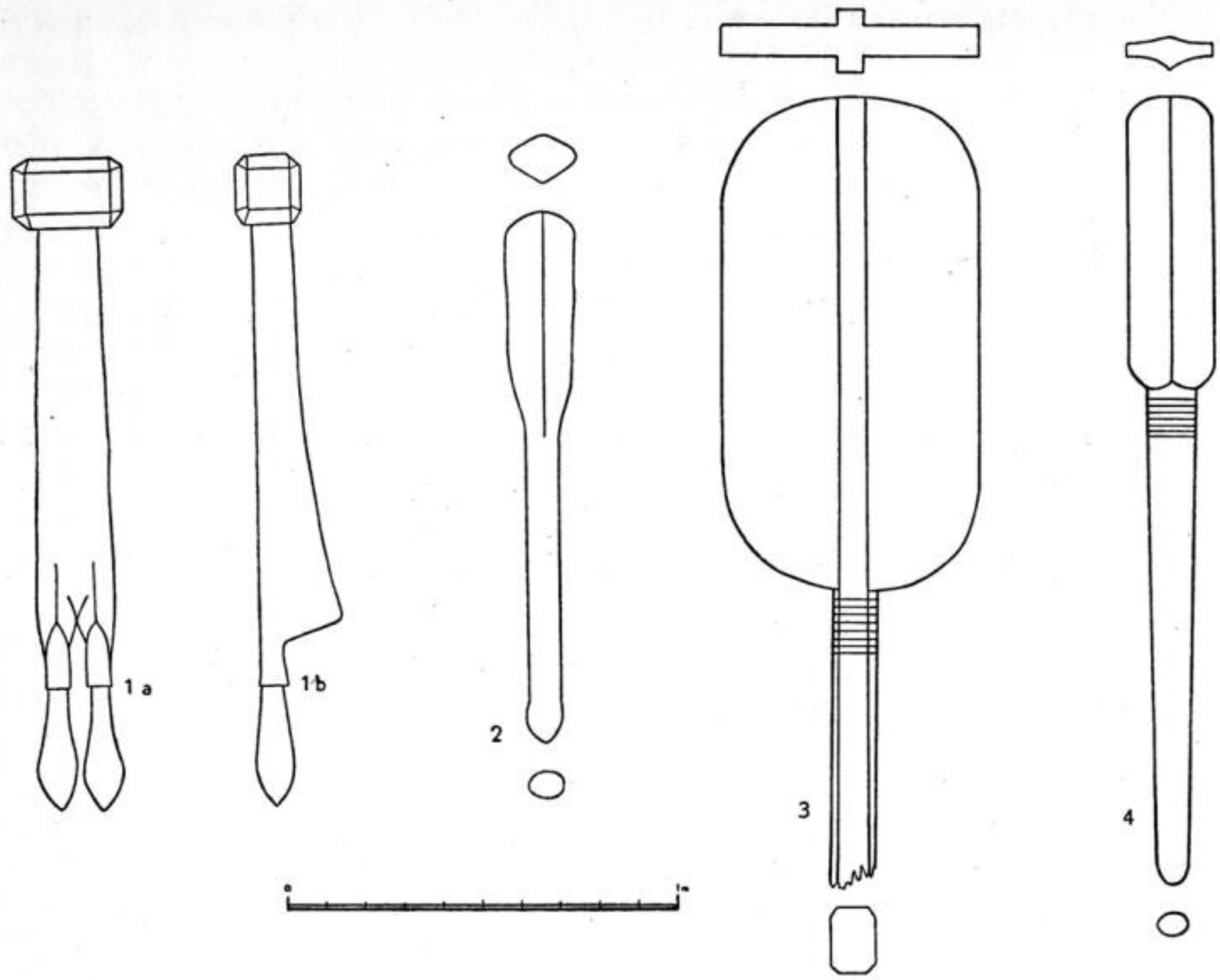


Fig. 10. 1) front and side view of wooden "sculpture". 2—4) oar-shaped monuments. Cemetery 5. From drawings by Mr. G. Söderbom.

clay. The inner sides of the walls had been painted red. The floor had been covered with the skulls of many oxen and pieces of hides. Digging in the centre of the structure, he had come across a coffin containing a female corpse.

Of this grave, which I have marked in the plan Fig. 9 after ÖRDEK's indications on the spot, and which was probably the most prominent grave at the place, only some scattered planks of large dimensions are left. Some of them, and some fragmentary poles, show traces of having been painted with designs in red and black, Fig. 11.

To judge from the surviving fragments, the decoration in black and red seems to have been quite simple, consisting of straight lines. Fig. 11 E has a figure somewhat recalling a candlestick with many arms. Does it represent a very stylized tree? The occurrence on a Han dynasty tile of a similar representation is worth mentioning (Janse 1936, Pl. III: 2).

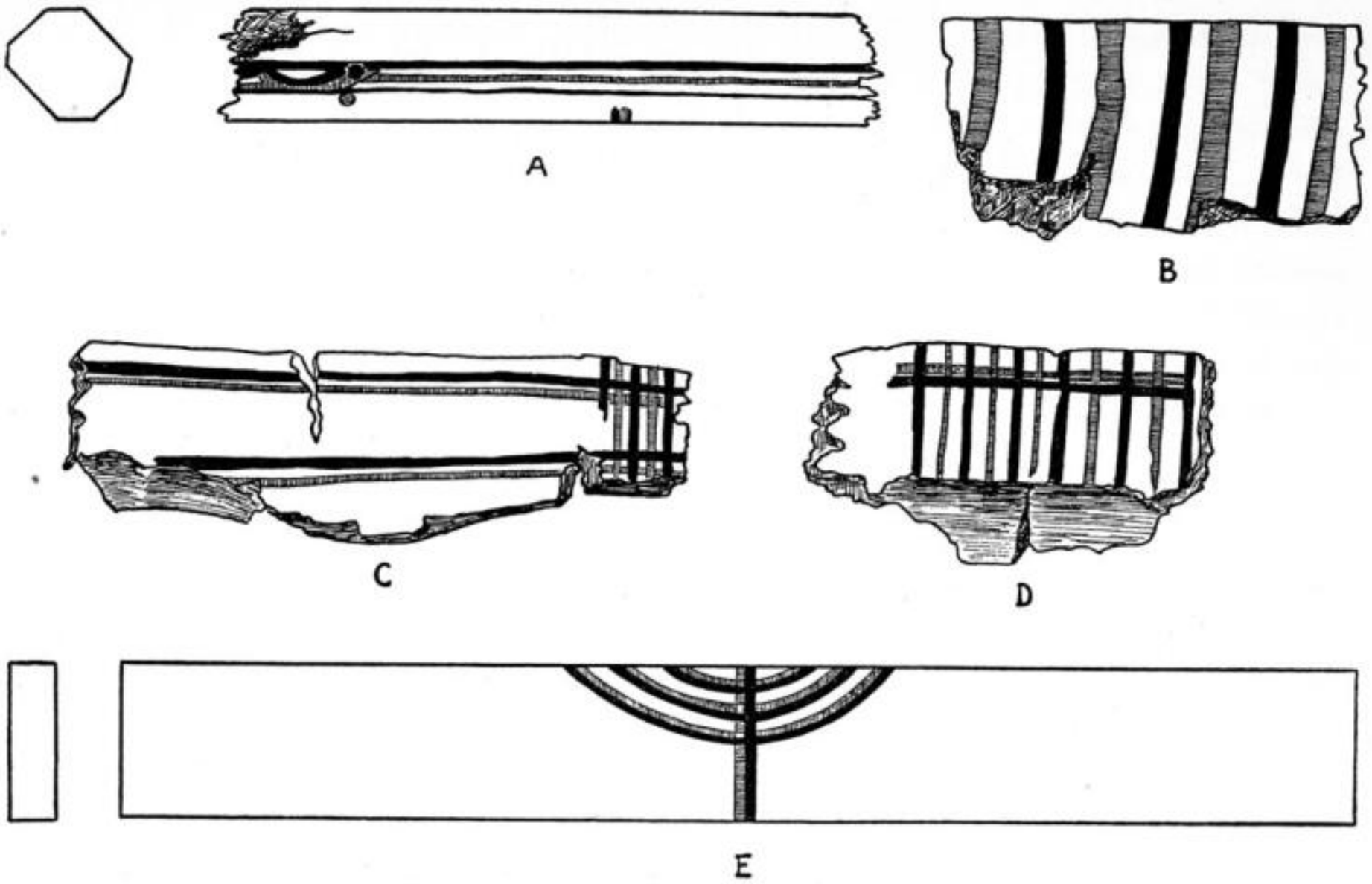


Fig. 11. Parts of planks and posts from the eastern part of Cemetery 5. Hatching = red, black = black. From drawings by Mr. G. Söderbom.

A lot of ox-skulls were also scattered around this part of the hill. A pair of ram's horns were bound together with some coarse vegetable fibre.

All over the northern, eastern and southern slopes of the hill were scattered planks and boards from disjointed coffins of various sizes together with fallen posts and poles and oar-shaped monuments, Pl. IX b. The curiously shaped, heavy boards, curved and with a groove at each end (seen on Pl. VIII b) at first puzzled me very much. It was not until the discovery and excavation of the intact coffin 5 A that I realized the significance of these boards: that they were the sides of coffins. The largest found were 47 cm. broad. There had been altogether 120 coffins in this burial place, but, as will be seen from the plan in Fig. 9, only eight could be located in situ. It is a remarkable fact that all the coffins are of the same construction (described in connection with Grave 5 A from which description it will also be realized how easily these coffins fall to pieces).

More than one hundred standing posts are marked on the plan. I counted seventy-five fallen posts. Of the oar-like monuments fourteen were standing and fifteen lay prostrate. The sand forming the crest of the hill may hide some more "oars" or other lower monuments.

Though treasure hunters had ravaged wantonly on this site they could not be the only cause of the destruction. The wood of the coffins was as dried-up, sun-bleached

and sand-worn as that of the posts still standing, showing that they had been exposed for a considerable time. Owing to the loose material that formed the hill it cannot have been very long before the ever active wind erosion uncovered some of the coffins, buried at a shallow depth, especially on the most exposed sides of the hill, that is, with the prevailing strong winds from the north-east and east, the eastern end and the northern and southern long sides. It was these very parts of the hill that contained most of the disjointed coffins and fallen posts etc. On the top, however, the sand has accumulated, and thus protected the remains there.

The cemetery was of course in use for several generations, and the covering of sand may in some instances be used for determining the relative age between the constructions. Thus, the big palisade must be older than the coffins which have been buried in the sand covering the centre of the palisade. The coffins 5 G and H on the very top of the hill must be somewhat later than the rest.

When working at the spot I was considering the possibility that there had been some kind of roofing on the posts, or at least on some of them, especially those at the eastern end, where they seemed to be arranged symmetrically as columns. However, I was never quite convinced. Afterwards, when studying the photographs such as, for instance, Pl. VII c, and observing the uniform height of many of the posts standing close together, I again felt inclined to believe that there had been some roofing over a part of the hill. If it ever existed, such a roof must have been made of some very light material such as reeds, and must have been completely blown away long ago, as no traces whatsoever remained. The presence of a roof over parts of the burial place would in a way explain the very shallow depth at which some of the coffins were buried.

No clear connection could be observed between the arrangement of the high posts and the situation of the coffins in situ. In several cases there was, however, a short thin pole or peg standing just in front of one end or both ends of a coffin. The same arrangement was observed by HEDIN at the single graves in the Qum-darya delta. In two instances a large "oar", similar to that shown in Fig. 10: 3, was placed at one end of a coffin at Cemetery 5.

Originally the large posts may possibly have surrounded certain graves, having been erected there either as funeral monuments or as roof supports, but as the cemetery grew more crowded successive encroachments were made into the area of the first constructed graves. During an early stage in the use of the burial site the big palisade or stockade might have separated two parts of the burial-ground. When studying the plan Fig. 9 one has the impression that the whole construction is facing east. Near the east of the central part of the big palisade, for instance, the posts of uniform size are standing in a semicircle, and in front of this was situated the destroyed hut with its grave.

During our digging in this semicircular space a pile of wooden pegs came to light; they were made of branches 3—4 cm. thick, pointed at one end, and resembl-

ing tent pegs. Many of the same kind were lying on the surface of the eastern, flat part of the hill. Their actual use was never discovered.

Only a few metres from where these pegs were found three heavy planks were standing on end in the sand. (two of them visible in the foreground to the right in Pl. IV a). These might possibly be the remnants of a destroyed grave of a construction differing from the ordinary one prevalent on this site. Some planks of the same short, stout kind, and burnt at one end, were lying on the surface nearby. Whether they were intended to be used for firewood by the treasure hunters or had been burnt in ancient times it is impossible to say.

II. Wooden Sculptures.

The wooden monuments are all more or less shaped by man, the oars and the pole seen to the left in Pl. IV a being those most elaborately worked. We also found three human figures of wood, and one "sculpture" Fig. 10: 1 which is difficult to classify.

The two reproduced in Pl. V d are the best preserved ones;[1] both show traces of red painting. The figure of the man was found in the sand on the lower part of the southern slope of the hill. It has a carved face with strongly marked features of a rather non-Mongolian character, Pl. V c. The arms are wanting; it was once ithyphallic. Height of figure 143 cm.

The female figures Pl. V a and d have flat, oval faces, their features having probably been painted. The arms are very thin and badly proportioned. The calves of the one with complete legs (Pl. V d) are quite thick, and the legs are a little knock-kneed. The height of this figure was 134 cm.; ÖRDEK found it less than 100 m. to the east of the hill.

The other female sculpture, Pl. V a, was found on the eastern slope of the hill in a very weather-worn state of preservation; it had apparently been lying exposed for a very long time. The lower part of the legs was worn away, but it still measured 158 cm. in height, i. e. it must originally have been somewhat over natural size.

All three of them are very crude but considering the limitations inherent in the material, they are in a way naturalistic. It is probable that these figures have stood in some relation to the coffins, though the circumstances here afford no evidence thereof. STEIN has found similar ones, though smaller, when excavating in burial-grounds nearer Lou-lan. At the foot of grave L.Q.2 he found a wooden female figure, 70 cm. high without legs, with a flat face and painted with red ochre (Stein 1928, Pl. XV, L.Q.ii.01). In grave L.S.6 he discovered a female stone figure, only

[1] These two sculptures I brought to the base camp of the expedition at Qum-darya, where I last saw them. Whether they were brought to China with the rest of the collection or not is unknown to me.

10 cm. high (Stein 1928, Pl. XXVI, L.S.6.01), and in grave L.S.5 and from the burial-place L.T. he describes a female figure of wood from each place, of the same kind as the first mentioned. The one from L.T. is identical with that reproduced in the fig. facing p. 262 in HUNTINGTON's The Pulse of Asia.[1]

The three figures found in Cemetery 5 are of course too large to have been enclosed in the ordinary coffins. It is not impossible, however, that they may have been housed in such a hut as the one described by ÖRDEK (pp. 62, 64), but they can equally well be regarded as representations of gods associated with the burial-place in general and not related to any particular coffin.

III. The finds.

The objects from Cemetery 5 will be treated in the following order: firstly the finds made in the coffins in situ, secondly the objects collected from displaced coffins, it being however possible to recover a part of the inventory; thirdly, the remaining objects found on the surface or in the sand, all of them originating no doubt from coffins destroyed by nature or by man.

In the descriptive list at the end of this section a number containing a letter after the main number 5 denotes a special coffin, thus 5.F:7 means article 7 from grave F of Cemetery 5. Whereas an ordinary number, for instance 5:33, denotes a surface find from the same burial place.

Coffin 5. A.

The only quite untouched grave was 5 A. It was found immediately to the east of the big palisade. The eastern end of the coffin was quite near the surface, the other end was covered with one metre of drift-sand that had accumulated around the big palisade. The coffin was lying in the direction S 76°W—N 76°E, at both ends a thin pole stood as a mark. After the sand had been removed the coffin was found to be completely covered with a couple of ox-hides with the hairs still remaining. The lid consisted of ten short boards laid across the coffin, cut to follow its outline, and kept in place only by the hides, which had apparently been applied in a wet state because they fitted very closely around the lid-members, when therefore the hides were removed the lid came off with them. In Pl. VI a, unfortunately an inferior photo, the lid with the hides is seen lying to the right of the coffin. The coffin was made of two very massive planks, each carved out of half a trunk; at both ends a segment of the natural roundness of the trunk had been left intact. The inside shows a distinct concavity, and the outside a

[1] This refers to the first edition; in the second edition this plate has been omitted.

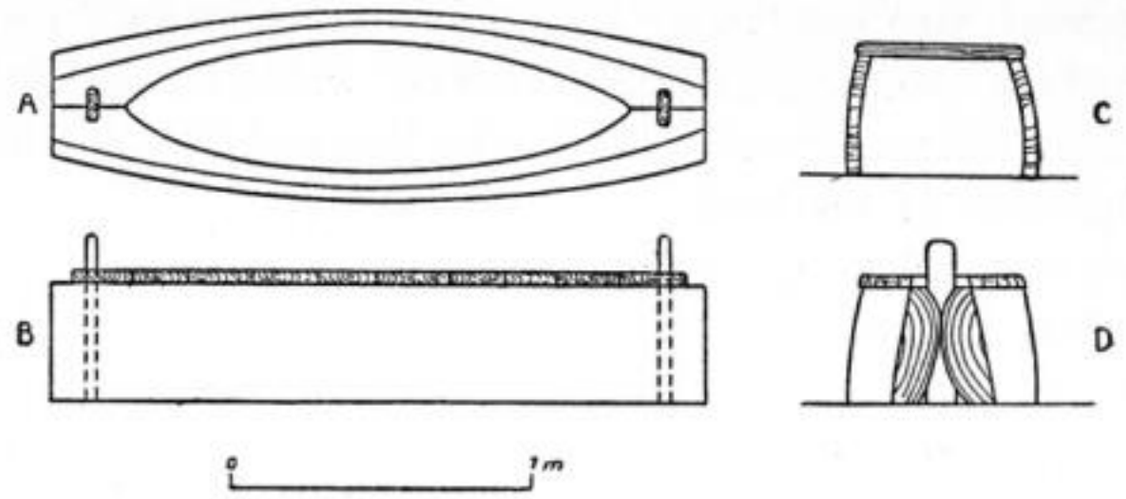


Fig. 12. Coffin 5 A. A) from above, lid removed. B) side view, lid in place. C) section of middle part. D) end view.

corresponding convexity, Fig. 12. The planks lean against each other, the ends touching, thus forming a lenticular space between them; there are two narrow vertical boards fitted into grooves at the ends of the planks. There is no bottom, and no nails or dowels have been used to fix the different members.

At the burial the dead had been placed in proper position on the ground, the coffin then being assembled over him.

The tight-fitting hides had protected the wood so perfectly that it looked quite fresh, and no sand had entered the coffin.

The body, that of a mummified young man, was resting on its back with the head at the eastern end of the coffin, which was just big enough to enclose the dead. Except for the face and the feet, the entire corpse was wrapped in a coarse mantle of yellowish-white wool (Pl. VI a) measuring 210 × 155 cm., and having a thin fringe formed by the warp threads along the lower end. Near the head the right edge of the mantle was tied up into a small bag containing grains of wheat.

The head was covered with a large rounded head-dress of thick white felt, Pl. 10: 2, with five feathered pegs inserted as a decoration on the left side and kept together by a cross-piece wound with sinew-fibres. The head-dress reached below the ears, and was fastened by means of a cord under the chin.

Round the hips he wore a narrow loin-cloth, only 5 cm. wide, of the same woollen material as the mantle, and having long fringes at both ends, Pl. 11: 3. It was tied in front on top of the penis, which was placed upwards. A red thread is inserted at each end. The mantle, too, has two short red stripes in the weft. Can there be any meaning in these single, red elements in the otherwise undyed fabrics? They are too insignificant to be regarded as embellishments.

The feet were dressed in a kind of clumsy shoes or moccasins of ox-hide with the hair remaining. They were tied around the ankles with thick strings, and in the knots small feathers were inserted. This footgear had never been in actual use. The same observation was made in two other cases. The same type is shown in Pl. 26: 6 from Grave 36. The headgear also looks quite unworn.

The only personal ornament buried with this mummy was a rounded, flattened bead of opal, threaded on a thick white cord that was tied twice round the right wrist, Pl. 9: 12, the fringes of the ends hanging down on the outside, the bead being placed on the inner side of the wrist.

Outside the mantle, and at the outer side of the right thigh, the small basket Pl. 14: 5 was found. It has a rounded bottom, is neatly woven of dicotolydonous stems, stiff grass and some root-fibres with a design made up of the glossy outside of split grass, forming horizontal and zig-zag bands. The mouth was closed with a layer of white felt tied on with woollen strings. There is also a string handle. The basket contained a small amount of a dried-up substance, which according to Mr. HJ. LJUNGH once was a porridge of millet.

Under the back, inside the mantle, a bunch of four arrows, about 70 cm. long, were found tied together, each of them with two tufts of feathers, but without arrow-head, Pl. 7: 13. Probably they were not real arrows but only symbolical ones.

In the right hand of the mummy there was a tamarisk twig, 52 cm. long.

At the throat there were found pieces of the ears of calves, and the whole front of the body was strewn with grains of wheat and twigs of *Ephedra*. These latter had sunken down on the open front of the body as seen in Pl. VI c.

Except for this opening in front the mummy was perfectly preserved. It was 170 cm. long. The teeth were not very much worn, showing that he must have died quite young. The brown-black skin stuck closely to the broad cheek-bones; the long eyelashes and thick eyebrows still remained, and the long dark-brown hair was tied at the back with a red string.

A big fracture on the forehead, clearly visible as a black spot in Pl. VI c, may have had some connection with his apparently early death. The expression on his face was that of a wild grimace as if he had suffered a violent death.

This burial is typical of all the rest at this place, and its close resemblance to several of the graves found by STEIN and to HEDIN'S Grave 36 is evident.

Coffin 5. B.

The planks of this coffin were practically straight, of nearly uniform thickness, and the end-boards were consequently broader than in coffin 5. A, cf. Fig. 13. Otherwise the construction follows the same principle and is an exact parallel to Stein 1928, Fig. 173.

Around this and the adjacent coffin 5. C, both lying in S 65°W—N 65°E at a depth of 1 m., the high posts stand close together. Three of them had to be taken down during the excavations to prevent accidents, as they were standing in very shallow pits in spite of their height of 4.25 m. Pl. VII a.

The coffin was plundered so long ago that the shaft had been totally filled with drift sand, and contained only fragments of its former outfit. Only two cross-pieces

were left of the lid, the ox-hide cover was gone, and sand now filled the coffin, with its mixed-up human bones. Of the dress remained a piece of a yellow woollen mantle and parts of a loin-cloth in tapestry weave, yellow with a brown pattern forming steps, Pl. 13:4, and with fringes along the lower edge. The pattern is of special interest owing to its conformity with the decorations of so many baskets, denoting that it may have been woven locally; the tapestry technique is, however, of Western origin.

There were also a few fragments of wooden pegs with small incised triangles filled with red colour, one of them probably a comb tooth, some Ephedra twigs and the lower jaw of a vulture. Mr. G. BEXELL has been kind enough to determine the jaw as belonging to the species *Gypaëtus barbatus*.

Coffin 5. C.

Situated very close to the previous one but 30 cm. higher. Near the eastern end of the coffin there was a small polyhedric and red-painted pole wound spirally with a string of camel's wool.

Only the east end-board and the northern long side were intact of the coffin, which was of exactly the same type as the one at its side. It measured 1.96 m. in length, and was entirely filled with somewhat moist sand.

The only object left in the coffin was the lower part of one of these mysterious wooden objects depicted in Pl. 7:2—7; round it a brown woollen string was wound.

Coffin 5. D.

On the eastern side of the big palisade and very close to it we came across a coffin lying in N 55°W—S 55°E. The south-eastern end-board and two lid members at the same end were wanting, this end being near the surface, whereas the other end was covered with 0.9 m. of sand and lying 1.5 m. lower than the coffin

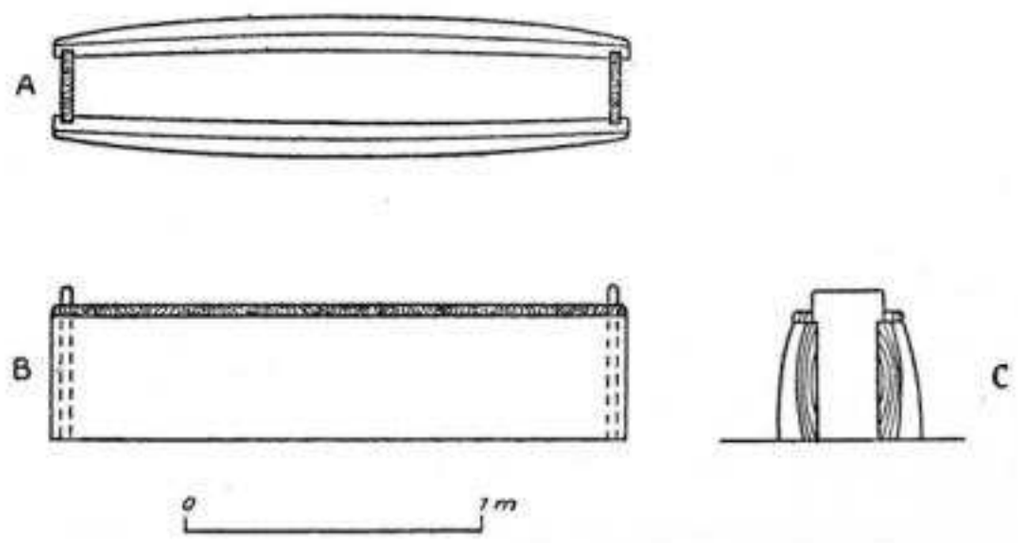


Fig. 13. Coffin 5 B. A) from above, lid removed. B) side view, lid in place. C) end view.

5. A. It was built on the same principle as 5. B and 5. C. Length 2.3 m., width at the middle 42 cm. Ox-hides had covered the lid, and the wood looked very fresh. Most of the coffin was filled with sand, and it contained no objects. The corpse was apparently dragged out through the open end, and such objects accompanying it as were of no interest to the plunderers were left lying around. There we picked up objects such as a small basket (5. D: 2), the rear part of a reed arrow-shaft with three-winged feathers (5. D: 3), two complete and two fragmentary arrow-shafts with two tufts of feathers and decorated with small incised triangles (5. D: 4—7), one half of a wooden object that has been wound round with strings, Pl. 8: 9, the two halves of an object in the shape of an animal's leg, Pl. 8: 3, a long feather wound with red wool probably a part of the adornment of a head-dress, and several bunches of cut Ephedra twigs tightly wound with woollen yarn, Pl. 11: 6. The latter as well as the two last-mentioned wooden objects must have some symbolical or ritual significance, which will be discussed in the following.

Coffin 5. E.

Near the western side and the southern end of the big palisade a coffin of the same kind as 5. A was buried in an E—W direction lying between an oar-shaped monument and a big pole. Only the western end of the lid was intact. Length of coffin 2.4 m., width at middle 40 cm., height 30 cm.

The corpse was not totally destroyed by the plunderers; for instance, were the mummified legs and the footgear still in place, the latter was taken by us as a sample (5 E: 2), being of the typical shape. They had been tied with long, thick cords of brown wool. The mantle was of coarse brown wool. It has two short red stripes just like the mantle in 5. A. At the right side of the corpse there was a red-painted arrow, Pl. 7: 11, too crooked to have been suitable for shooting which would seem to indicate its symbolical meaning. Grains of wheat, twigs of Ephedra, a second arrow, and the wooden object Pl. 8: 4 were also recovered from inside the coffin.

The legs of the corpse were hairy (brown colour), and below each knee was tied a string.

Coffin 5. F.

Immediately to the west of coffin 5. E was another coffin situated in N 60° W—S 60° E, the head placed towards the last-mentioned direction. Length of coffin, which was identical with 5. A, 2.6 m., largest width at top 45 cm., height of side boards 35 cm. The eastern end had been opened by treasure-seekers, and half of the lid was gone. It had been covered with hides. The head was missing on the poorly mummified corpse, which was wrapped in a coarse grey mantle. Near the upper end the edge was tied into three small bags, two of which contained Ephedra

twigs, and the third grains of wheat and millet. Near and below the right hip and outside the mantle we found the small basket 5. F: 1 of the ordinary type. It once contained a porridge of millet.

The shoes were of the same kind as those in 5. A and 5. E. A loin-cloth of greyish white wool of the narrow type with fringed ends was much decayed. At the right side of the corpse, and inside the mantle, there were four long arrow-shafts with double tufts of feathers, Pl. 7: 14, and a thin branch of tamarisk. Many Ephedra twigs had been strewn on top of the buried corpse. One feature that I did not find in any of the other coffins was an extra mantle placed as a matting under the corpse; it was badly preserved, woven of coarse wool with irregular stripes of brown and yellow.

From here came also the complete "horse-leg" Pl. 8: 5 retaining both lashings. A diminutive bronze ring is fastened on the lower string.

The similarities with the funeral deposit in grave 5. A make it highly probable that the body in this coffin was that of a man.

Localities 5. G—5. L.

Besides the completely preserved and untouched grave 5 A, and the plundered graves 5 B—F, where the coffins were left in situ, there were six further instances in which groups of objects could be gathered which had no doubt been buried together in the same coffin. They have been numbered 5. G—5. L, each letter denoting a special coffin or mummy. Like 5. B—5. F these inventories might be incomplete, in several cases they certainly are, being all that was left after the treasure-seekers had had their "pick" or at least thrown away some of the objects.

I do not intend to describe each of these graves separately as no coffin was left in situ, I will only draw attention to some objects of special interest.

5. G: 3, depicted in Pl. 7: 9 but more clearly visible in the drawing Fig. 14: 3 is a straight peg carved to represent a snake swallowing a spool-shaped peg. The back of the body is completely covered with small incised lozenges filled with red, the belly having transverse lines, each alternate one containing a row of small triangles. The decoration is intended to represent the scales and the pattern of the snake, though the same elements of multiplied triangles have been used as ornament on arrows, pegs and combs, where the designs are purely abstract. A parallel to this snake-figure is Pl. 7: 8 (detail Fig. 14: 4). Both have a small hole a little behind the middle, and might thus have been suspended on a string. The exact use of these two snake representations is hard to determine; we can only point to the magical and medicinal qualities ascribed to the snake in general. Like the frog, it has become a symbol of rain, which however is regarded by some authors as a secondary development of a primary symbolism of promoting fertility; it is also frequently used as a phallic symbol.

Pl. 9: 11 comes from the coffin of a small child. It is a kind of armlet made up of a string and a stone bead, as in 5. A: 4.

The brown felt head-dress for a child, Pl. 11: 5, also originates from the same coffin.

In the rear part of an arrow-shaft, Pl. 12: 2 the triangle pattern is more deeply incised than is generally the case with these thin wooden pegs.

On Pl. VI b is seen the upper part of a female mummy, the face of which was marvellously well preserved, though the body was much decayed. It could hardly have been exposed to the open air for many days as it retained some spots of a fair complexion. On the dark-brown flowing hair, parted in the middle, she wore a head-dress of yellow felt, pointed and adorned with three red cords and the split skin of an ermine (Pl. 11: 4). Her brow was high and noble, she had a fine aquiline nose and thin lips, slightly parted and showing a glimpse of the teeth in a quiet, timeless smile. One looked at this expressive and beautiful face with very strange feelings, which were only heightened by the fact that the rest of the body was so badly decayed. She is also seen on Pl. IV b, lying in the centre of the picture.

Round the neck she wore a simple necklace of fine strings, red and brown, adorned with a small tuft of feathers and a diminutive bead of a grey stone. A loin-cloth of the same type as Pl. 11: 7, though broader, was made of undyed wool; it was knotted in the front.

It is not impossible that the remains of this lady were torn out of her coffin during Ördek's visit to the place immediately before our visit, though he did not definitely admit it. On the top of the hill there was a disjoined coffin, the wood of which must have been carefully covered until recently as it showed quite fresh surfaces. The mummy might originally have lain in it, which would account for her beautifully preserved features.

Garments.

Starting our discussion of the surface finds with objects belonging to the apparel of the buried, we have firstly the head-dresses. Several of these have been reproduced together in Pl. 10; most of them are incomplete. Their general shape is that of a rounded or slightly pointed cap or hat. The material is thick felt, seven of them of dark brown colour, one yellowish and one undyed (the two last-mentioned, 5. K: 1 and 5. A: 1, already described). The most highly decorated ones are entirely covered with an elaborate string ornamentation in red or yellow, Pl. 10: 1, 3, 4, 6; in other specimens there are only two or three cords, as in Pl. 10: 7 and 11: 4. The edge has in some instances retained a scallop stitching. The split skin of an ermine has been fastened round most of the head-dresses in such a way that the head of the ermine hangs down in front. The skins on the head-dresses from here

are very fragmentary (cf. Pl. 10: 1 and 4) but on the fine and well-preserved head-dress from Grave 36 the skin and the way it is fastened is clearly seen, Pl. 26: 3. Mr. GERHARD BEXELL has kindly examined a couple of the skulls and found them to be of the species *Mustela erminea*.

As these ermine skins have been fastened to women's head-dresses as well as to men's it is unlikely that they represent an adornment for hunters only. Have they possessed a magical significance? Though furnishing no exact parallel, it is nevertheless worth mentioning that the present-day Mongols have a couple of rounded felt caps the tops of which are decorated with the tail of a squirrel.

The group of feathered pegs or plumes that is so characteristic of these Lop-nor head-dresses was inserted on the left side. The specimen in Pl. 10: 2 has only a small set of such a kind, and on those depicted in Pl. 10: 1, 3 and 9 most of it has disappeared. Pl. 10: 8 shows a complete set of plumes with finely preserved feathers. The pegs are wound round with gaily coloured red wool, most of the feathers are light brown, possibly those of the Lama duck; the longest one, however, is black and its stem is wound round with red wool. A fragment of a weasel's skin is adhering to these plumes.

There were several less complete plumes from head-dresses, both short and long, Pl. 10: 5 and 9: 9—10.

As we have seen from Grave 5 A, B, F and K, both men and women wore a woven loin-cloth of wool. They are of two types, one very narrow with fringed ends, Pl. 11: 3 (already described), the other of varying breadth but having fringes along the lower edge as well. It is not impossible that the former were used by men and the latter by women, though the specimens are too few to allow of any definite statement. And it must be remembered that the old lady in Grave 36 wore a very narrow loin-cloth (though with long fringes). STEIN does not describe any of these articles, merely mentioning that they were made of tassels.

Pl. 11: 7 is typical of the broader form, with a long thick fringe along the lower edge and at the ends. It is executed in plain weave and of rather uneven make.

Pl. 12: 1 is more elaborate, plaited of fine and even, twisted wool. Here the fringe does not consist of the extended weft or warp threads as in the former cases, but is inserted and is of two different colours. The ends are torn off. Mr. LJUNGH's microscopical analysis of the wool used in this loin-cloth has revealed the unexpected fact that this sheep's wool is of such fine texture that we must presume it to be an importation from the west, probably Bactria, where very fine sheep's wool was procurable at the time in question (cf. Appendix II). Now we have no idea what kind of sheep formed the herds of the autochthon population around Lop-nor. But it seems that other woollen articles from here are of a much coarser material, though none of these have so far been examined microscopically. In any case a connection with the West is unmistakable.

The fragment Pl. 11:1 is from one end of another loin-cloth; the material is quite the same as in the preceding one, and so is the technique. When complete these fringes must have reached to the knees.

The chief article of the apparel was the big mantle, woven of heavy woollen stuff. No. 5. A:1 is the only complete specimen that was brought away. They were large enough to protect the whole of a man's body.

In Pl. 13:5 is shown a sample of a mantle of good quality, neatly woven of soft material, much superior to the ordinary ones. It is light yellow with a bright red ribbon stitched on to it afterwards.

Ördek told us that on the first tour of exploitation to this place some of his companions found some of these mantles in such an excellent state of preservation that they used them as horse-cloths. It might be recorded here, too, that the ox-hides covering coffin 5. A were so little ravaged by time that they aroused the greed of one of our Turkish diggers, who wanted to take them for making boots. I mention this incident to emphasize the state of preservation of perishable articles, which can only be due to the extraordinary aridity of the climate. It also corroborates the supposition that the corpses owe their mummification more to natural conditions than to artificial treatment.

The last article of dress is the shoes or low boots made of ox-hide after a very primitive model. Except on the soles the hair was turned inside. On the toes or on the front of the instep there are traces of small feathers and red woollen threads serving as decoration.

The outline of the footgear recalls the low Scythian boots, as far as their shape can be judged from the vase-pictures from the Kul Oba kurghan, Fig. 31.

If the head-dress, mantle, loin-cloth and shoes do actually constitute the entire dress, it is rather a primitive one. Considering the severe winter climate prevailing in the Lop desert with temperatures down to —32° C, and the terribly violent north-east storms, this dress seems very inadequate. It is very likely of course that the people used some kind of furs in the cold season, though nothing of that sort has been buried with the dead in the tombs.

One cannot fail to notice a general resemblance between the dress of this Loulan people and that of the inhabitants of the Danish Isles in the early Bronze Age, though there are of course no direct connections. These similarities are especially observable in the fringed loin-cloths as far as regards their general features. The technique is quite different. It is worth observing that the large skirt with which the Borum-Eshøj lady was provided has lately proved to be impossible to wear as a skirt owing to its size.

The natives of Tangir in the border country between present-day India and Eastern Turkistan still wear a sort of coarse mantle which must be of the same simple

sort as that used by the Lou-lan population about 2000 years ago. (Cf. Stein 1928, Fig. 39).

Personal Ornaments.

In the gay colours of the dresses, the long woollen fringes which flowed in the wind, and in the feathers on their head-gear this people gave most marked expression to their desire to adorn themselves. True personal ornaments, however, are rather scarce.

The young man in coffin 5 A had an armlet of a woollen string with an opal bead round the right wrist (Pl. 9: 12), and a similar armlet was found among the rest of the inventory from the destroyed coffin of a child, Pl. 9: 11. A child's armlet of bronze unfortunately went astray before the collection reached Sweden. It consisted of a round wire with thickened, multilateral ends, showing the same features as one of Dr. HEDIN's objects from Lou-lan (Bergman 1935 c, Pl. XII: 4).

The female mummy K, Pl. VI b, with the expressive face, wore a simple necklace of strings with feathers and a single small stone bead.

On the eastern flat part of the hill we found nearly five hundred small white beads, circular with flat ends. The diam. varies from five to two mm., Pl. 15: 15. Several of them were still left on the original thick string they had been threaded on.

Two specimens have been examined microscopically at the Invertebrate Department of the Museum of Natural History by Dr. R. BERGENHAYN, who states that they are made from shell of the genus *Spondylus,* probably *Spondylus sinensis* SOWERBY, which occurs along the shore of Eastern Asia. In any case *Spondylus* is a marine shell, and the material of these beads was thus traded overland for a very considerable distance, say at least 3000 km.

Beads of quite similar shape are known from Prof. J. G. ANDERSSON's excavations both from burial places and dwelling sites in Kansu of the middle Yang-shao period and onwards, and also from the Luan-p'ing grave find, Jehol.

The three beads Pl. 15: 9 are disc-shaped but are also made of shell. Similar ones of bone or shell of chalcolithic age are reported from Zhob in Baluchistan (Stein 1929, Pl. IX, P. E. 19).

One bead from the eastern part of Cemetery 5 is of serpentine, Pl. 15: 8, and nine are of grey and white, nicely striated opal, Pl. 15: 16.

Pins.

A kind of small pegs with a cylindrical head with triangle-band decoration and a thinner, pointed part (Fig. 14: 6-7) were quite common. One specimen (5. L: 3) was sticking in the remains of a mantle when found, which points to their having been

used as pins for fastening he mantles. STEIN is of the same opinion regarding the more well-proportioned specimens found in the graves nearer Lou-lan. Cf. also Pl. 27:7—8 from Grave 36. Their decoration consists of from five to fourteen transverse bands each made up of two lines of triangles with the points turned against each other. In some cases the diminutive triangles are most neatly carved, and when the lines stand close together there is formed a zig-zag pattern, Pl. 9:2, 5 and Fig. 14:6—7. The incisions have been filled with red colour.

The peculiar doll No. 36:8 is put on a small peg of the same model as those above, but plain and with short head.

The curiously shaped bone object Pl. 12:16 probably served the same purpose as the pins just treated. It is less likely that it is meant to represent some miniature weapon, such as a *ko,* because the projection is very thick and clumsy.

Combs.

Two complete combs and several loose teeth were found on the surface of the hill. Only in one case was one of these comb-teeth picked up inside a coffin (5. B :6), but we may safely assume that the combs were placed in the coffins, as for instance was the case in Grave 36.

The fine specimen Pl. 9:1 is a composite comb of seven long and four short teeth pierced through a transverse piece of tendon. The teeth are nicely polished and of round section, the upper part of the long pegs are flat. The front of them is decorated with seven triangle- or zig-zag-bands on each, the incisions filled with red, Pl. 9:1a, the rear side has also seven triangle-bands on each peg but arranged in zig-zag and less carefully carved, Pl. 9:1b.

Of this big comb-type there are several loose pegs; one is still sticking in a piece of tendon.

The small comb Pl. 9:6 is more plain, and consists only of one sort of teeth, with carelessly incised lines on the upper part.

Combs are placed in tombs not only to serve as a toilet article or an ornament for the dead but also as an amulet or charm, the comb with its many sharp points being regarded as possessing magical or prophylactic power. In the case of our big comb, for instance, this quality is probably heightened by the presence of so many pointed triangles filled with red colour forming the decoration. HANNA RYDH has referred to this property of the comb (Rydh 1929 pp. 105 ff. and 113) and drawn attention to combs with triangular ornaments from Malacca, worn by women to prevent certain illnesses.

Arrows.

As seen from the description of the coffins most of them contained one or more long arrow-shafts of wood. A good many specimens were also collected on the sur-

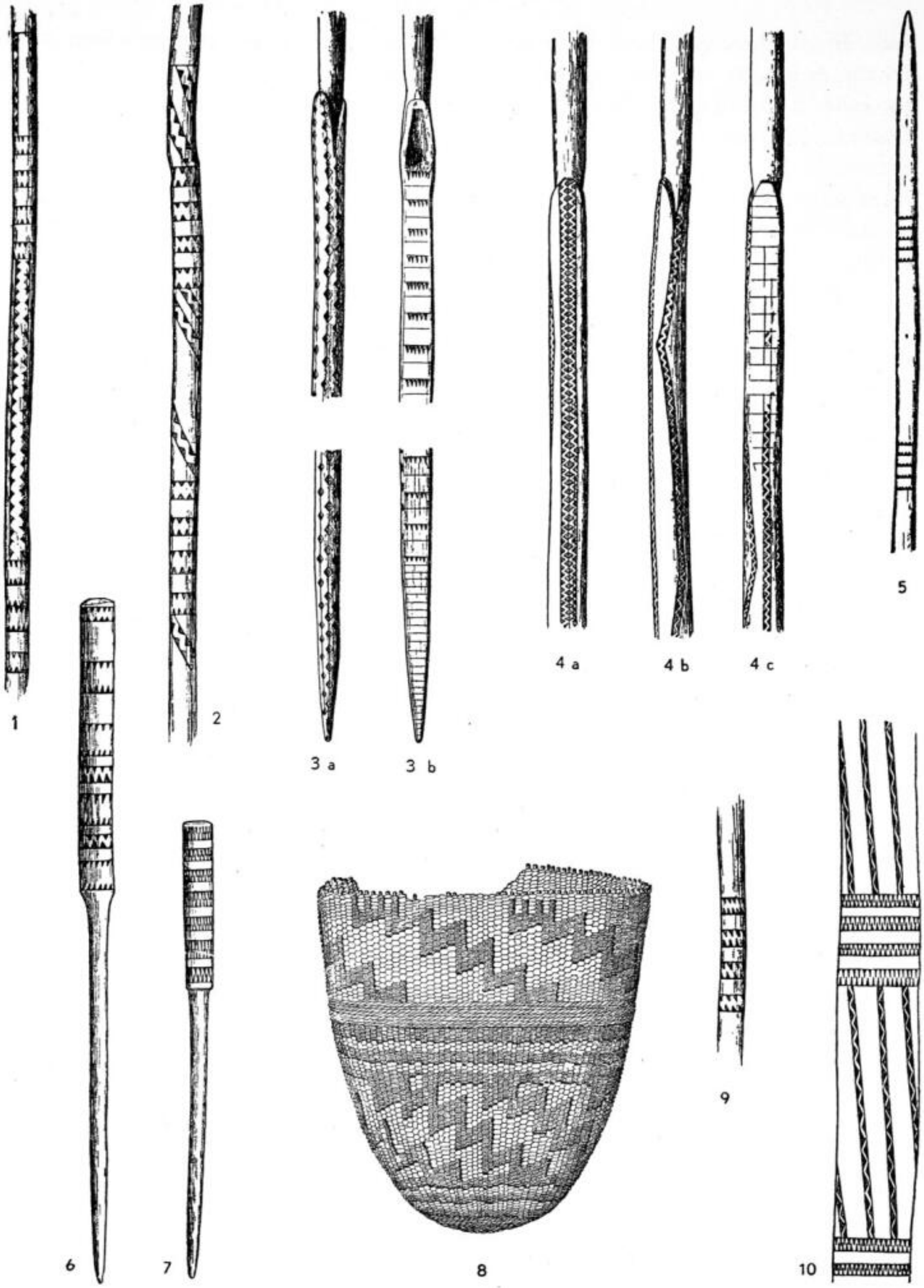


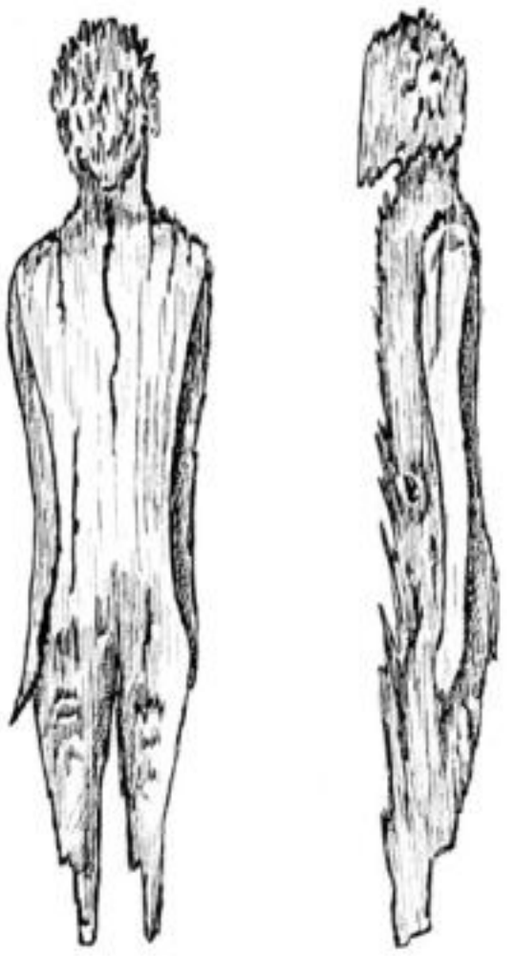
Fig. 14. Carvings on wooden arrows etc., and a basket, from Cemetery 5. 1) 5.J : 2. 2) 5 : 80. 3) 5.G : 3. 4) 5 : 48. 5) 5 : 112. 6) 5 : 131. 7) 5.L : 2. 8) 5.D : 2. 9) 5 : 46. 10) 5 : 103 (unfolded). Half size.

face. In all, there are about sixty arrows. When complete they measure from 57 to 78 cm. in length, and are fitted out with two tufts of feathers, one at the base and the other a little behind the middle, Pl. 7: 11—14. Only the quills of the short feathers are secured to the shafts, with a lashing of red or brown wool. This arrangement of the feathers makes the arrow unsuitable for practical use, and as there is no notch for the bow-string we may safely assume that they were never meant for shooting, but made only as symbolic arrows offered to the dead for their hunting tours beyond the grave. A few specimens, such as 5. E: 3 (Pl. 7: 11) and 5: 46 are also too crooked ever to have been in actual use.

Many of them are decorated with rows of small incised triangles filled with red colour, and arranged in transverse bands, each band consisting of two lines of triangles pointing towards each other. These bands, many of which give the impression of a zig-zag line, are arranged in groups of four or five, Fig. 14: 1, 2, 9, 10. There is always the same number of bands in each group on the same specimen; four are more common than five. On some specimens the space between these groups have two — in a few cases three — longitudinal triangle-bands either straight or in spiral, Fig. 14: 1, 2, 10; here the triangles are broader and less regular. These minutely carved incisions recur over and over again on the symbolic arrows, and it is therefore not unreasonable to regard the ornamentation as symbolic, too, and containing some quality valuable to the dead. It is of course very tempting to try to explain these triangles as having something in common with the fertility cult in the way proposed by several authors, for instance Hanna Rydh (Rydh 1929), and that they were carved on these mortuary objects for the benefit of the dead, their red colour being intended to enhance their vitalizing magic power. I am not sure, though, that a triangle pattern necessarily represents a quest for fertility; but like most ornaments occurring in primitive art it had some sort of symbolic meaning. As the triangles in our case are diminutive they manifest themselves only through their multitude, and I believe that the continually recurring arrangement of rows and bands etc. cannot be incidental but may be the chief object of the whole decoration, the exact meaning of which we can hardly interpret.

Before leaving this multiple triangle pattern, these saw-like indentations, or whatever we may call them, it is worth while to draw some parallels.

All kinds of primitive civilizations use triangular designs for decoration. Those lying nearest at hand in our case, both in time and space, and which are also best known, are the bronze cultures with centres in the Ordos region on the Sino-Mongolian borderland, and around Minusinsk in Central Southern Siberia. Our knowledge of the chronology of these, in some respects, closely allied cultures is not so well founded as might be desired, but it is quite evident that they originated earlier than the construction of the Lop-nor graves, and probably lasted till after that time. From among the published Ordos bronzes we may refer to the following, bearing a serrated ornament resembling our triangle-bands: Andersson 1932, Pl.



a. Wooden sculpture probably representing a woman. Height 158 cm. Cemetery 5. From a drawing by Mr. G. Söderbom.



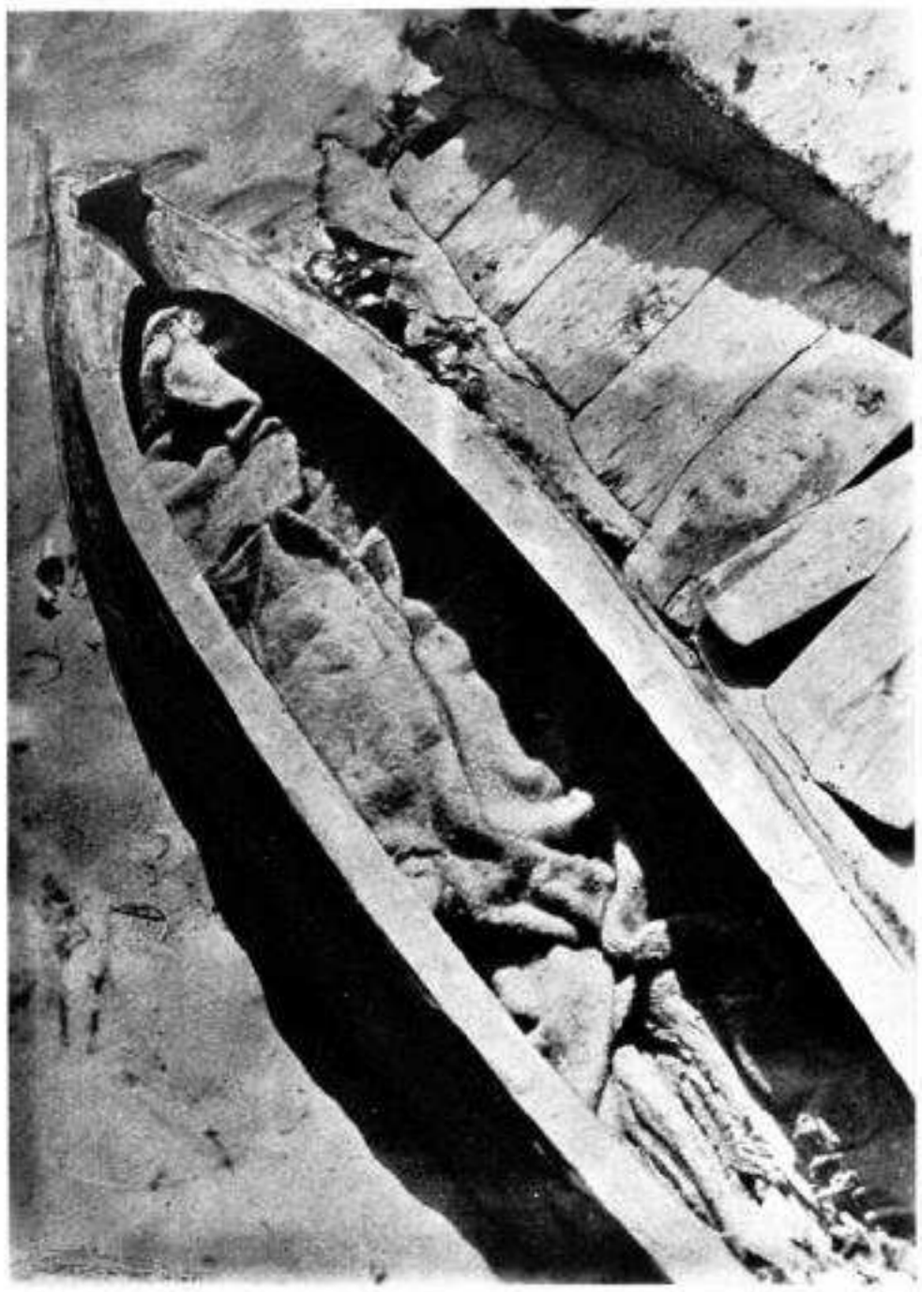
b. Salt-water lake near to the south of Qum-darya.



c. Profile of the left sculpture of Fig. d. From a drawing by Mr. G. Söderbom.



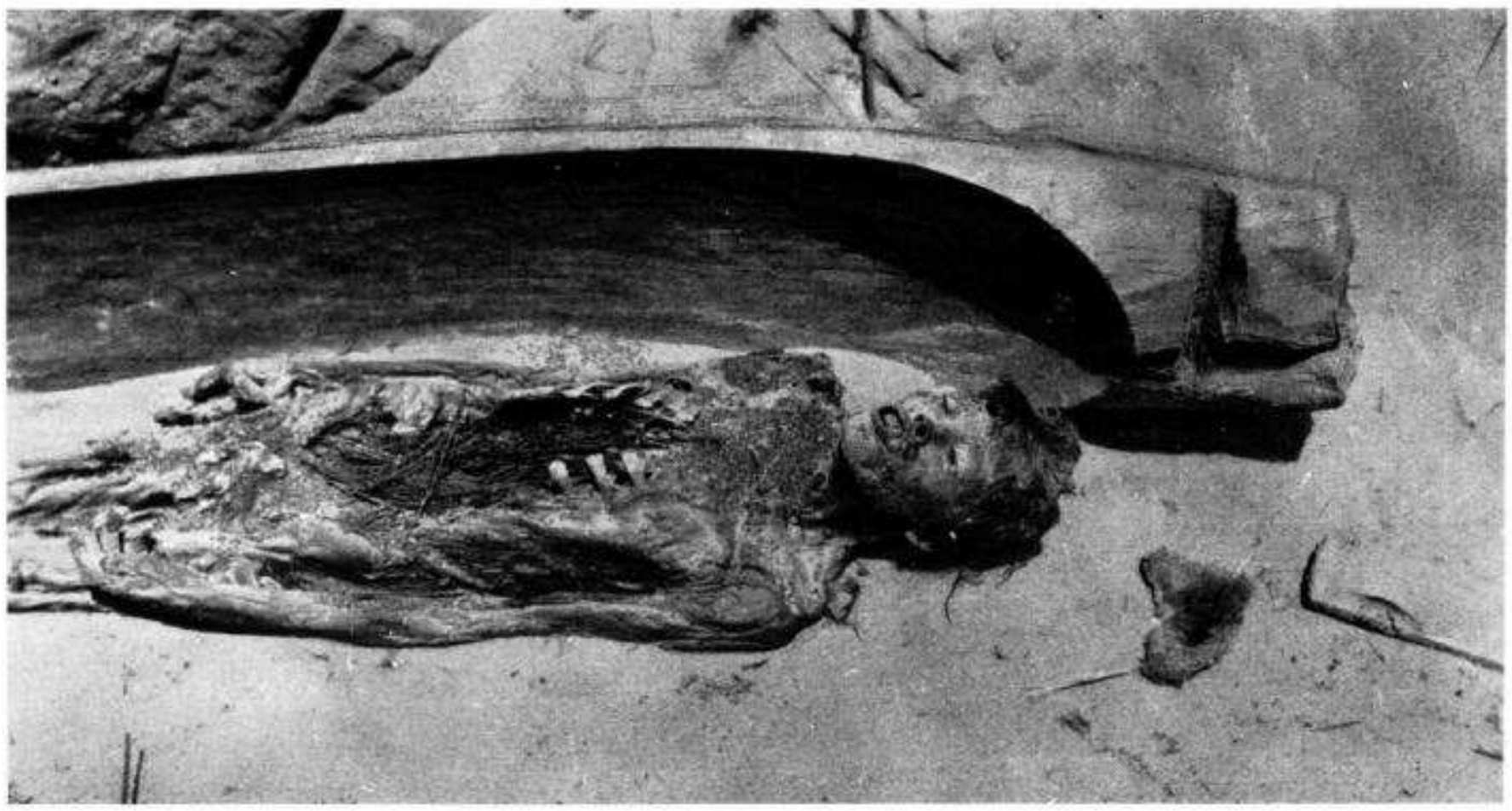
d. Two wooden sculptures from Cemetery 5. (Right).



a. Grave 5 A with the lid removed.



b. The female mummy 5 K.



c. The mummy in grave 5 A after having been stripped of his garment. Only one sideboard of the coffin is intact.



Fig. 15. Bronze tube of the Ordos style. (Inner Mongolia and the region of the Great Wall Pl. XI: 2).

V: 2; Salmony, Pl. 38: 8; Inner Mongolia and the Region of the Great Wall, Pl. V: 8. All these are bronze knives. Of special interest is a bronze tube in the last mentioned publication, Pl. XI: 2, and here reproduced as Fig. 15, because of its combined decoration of cowries and triangle-bands, i. e. two different elements possibly denoting fertility.

In the Museum of Far Eastern Antiquities in Stockholm there are several unpublished Ordos knives with elaborate triangle-band designs, two of them being reproduced, with kind permission, as Fig. 16.

From the Minusinsk region reference may be made to MARTIN's publications (1893 Pl. 11: 3—6, Pl. 15: 8—9, and 1897, Pl. 24: 4).

The relief designs on these bronzes, whether geometrical patterns or elaborate animal representations, originally imitated wood-carvings. Grave finds from Siberia and Altai have proved this beyond doubt in the case of the animal figures. We may be quite sure that geometric carvings similar to those on the pegs and arrows from our cemetery were the prototypes for the bronze pattern referred to above. In wood, this pattern has remained in use up to modern times (Martin 1897, Pl. 13: 5—7, some cutting-boards from the Ostyaks), and on Swedish Lap carvings in bone.

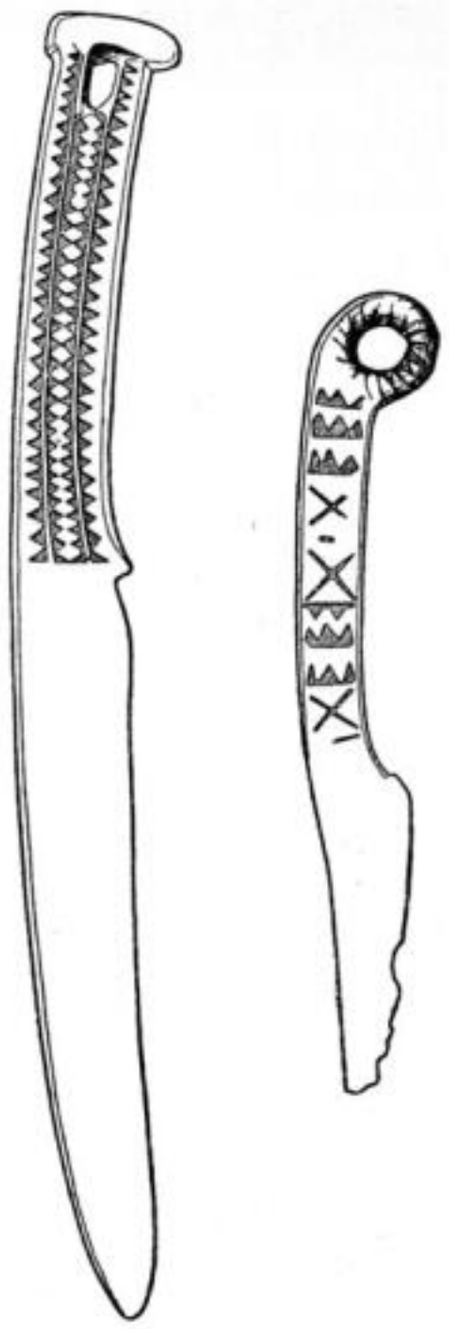


Fig. 16. Two bronze knives of the Ordos style. MFEA K. 12030 and K. 11225: 15. Half size.

One of the famous Noyan-ola textiles has a pattern of rows of pointed triangles alternating with geometrical scrolls (Trever, Pl. 19: 3), no doubt a Chinese silk fabric but with an unusual "barbaric" design.

Certain Chinese bronze mirrors of the Han period have one or more borders of small triangles, the so-called saw-tooth pattern, usually near the outer rim (for instance Sirén 1930, Vol. 2, Pl. 66—68) but it is uncertain whether this pattern has anything in common with our triangle-rows.

The well-made arrow-shaft No. 5: 112 is a little different in the ornamentation, as seen on the drawing Fig. 14: 5. It has five single rows of triangles with the points turned in the same direction. There are four such groups.

Beside these symbolic arrows there are also some real ones. 5. D: 3 is a fragment of a reed arrow with three feathers lashed to the butt. This type is well known from the Han ruins along the Tun-huang *limes* (Stein 1921, Pl. LIII, T. XV. a. vi. 001) and at Edsen-gol in the still unpublished material found by me in 1931.

5: 113—114 (Pl. 7: 10) are two stout arrows with a marked notch for the bow-

string, and pointed at the other end, i. e. made to fit into a socketed arrow-head, as for instance specimens like Pl. 12:9 and 12. They are 65.5 and 63.5 cm. long, and thicker than those mentioned above. Both may have been feathered but the traces are too obliterated to be definite. It is of importance in connection with the above discussion that these real arrow-shafts are undecorated. Cf. also the arrow 6. B:11 below.

Arrow-heads.

On a limited space on the eastern side of the hill four stone arrow-heads were found. Two of them are of green silex, one of brown chert, and the fourth of slate. The three first ones, Pl. 12:4—6, are willowleaf-shaped with rather blunt points, and of no high workmanship. One is a little polished. According to their type they might be labelled as neolithic but they are less well-finished than the other arrow-heads found in the Lop desert (Pl. 4:12—13 and Stein 1921, Pl. XXX and 1928, Pl. XXII) and ours are therefore, most likely, degenerated survivals from a true stone age.

The specimen of slate, Pl. 12:3, is polished all over, and does not represent any known type of arrow-head from Inner Asia.

From the same part of the hill the bone point Pl. 12:9 was brought to light. It is of regular shape with marked barbs and decorated with six incisions organically following the cleft base.

Pl. 12:12 is another point made of a tubular bone with seven incised lines round the base. There is a parallel to this bone point from a Scythic tomb at middle Dnepr (Minns, Fig. 82:1). The type is of course very plain, and cannot claim too much consideration.

It is noteworthy that no metal points were found, the fragments No. 5:24—25 being very uncertain. The scarcity of metal on this site is obvious. Only a few insignificant bronze fragments and a child's armlet were found. The rareness of metal is partly explained by the circumstance that ÖRDEK's followers on their two treasure-hunting tours were looking especially for "valuable" objects, i. e. such of metal, and they might of course have brought away some to their employer, the Amban at Charkhliq, whose antiquarian interest started the searches of this site after it had been discovered by ÖRDEK. ÖRDEK did not remember anything particular that they had found, which indicates that at least no large objects were discovered and brought away. Cf. the end of this chapter pp. 89 f.

On the other hand no great wealth of metal objects is to be expected among this people with their primitive civilization.

Baskets and other containers.

The small melon-shaped baskets Pl. 12:13, Pl. 13:1—3, and Pl. 14:1, 2, 4, 5 seem to have formed an important part of the grave furniture. Three of them were found

inside coffins, and the other twelve have certainly fallen out of destroyed coffins. HEDIN found two similar ones in graves, and STEIN, who was the first to publish these handsome objects, has five specimens originating from three graves. His baskets seem to be less decorated, or maybe more worn, than ours.



Fig. 17. Detail from the basket No. 5:70. Size 2/3.

At first I regarded these baskets as made of the stiff 'camel grass' so characteristic of the Central Asian steppes and deserts, and which the Mongols call Tsaghan derisun. Its Latin name is *Lasiagrostis splendens*. This has been proved only partly correct. Mr. LJUNGH's microscopical investigations have revealed the fact that the warp consists of dicotyledonous stems and the weft of grass and root fibres mixed. In the specimen No. 36:6 an Artemisia root has been used. This determination may be valid for all of the rest in this collection.

They are made in the following manner. Two groups of from five to twelve warp stems have been placed perpendicularly and fastened to one another (Pl. 13:1b and 14:5b). In some cases the number of the warp stems at the beginning is not the same in each group Pl. 13:1 has for instance 8 and 11 stems, 5:146 has 11 and 12. The spaces in the corners between the two groups of original warp stems have been filled out with radially arranged stems, and to widen the diameter new stems have been added subsequently, Fig. 17. Before the maximum width is attained there is as a rule a border of three-strand braid, which is repeated near the mouth. The rest of the wall comprises very close plain twined weaving. All of the baskets in this collection are decorated (though some of the specimens have almost obliterated designs because of wear) with horizontal stripes, triangles or oblique borders of step-like or zig-zag designs. These elements recur on nearly all specimens though they are arranged in slightly different ways.

The basket No. 5:70 is an interesting example of how the decoration of these baskets has been applied on top of the main weft element. The whole surface is much worn from long use. At the first glance it seems to be plain and undecorated. On closer examination small fragments of "extra" strands are observed in the grooves between the warp elements. They are the remains of the otherwise totally worn out decoration. A patient study of these remnants has revealed a pattern of the same oblique zig-zag bands as on most of the other baskets from here. Only in one detail does it differ from the rest: on the top part between the mouth and the three-strand braid running about 3.5 cm. below it. Here the ornaments are plaited over two warp stems and form irregular crescents.

The decorations are made up of split stems of grass the smooth and shiny surface turned outwards, thus affording a pleasing contrast effect.

It is quite evident that all have been made in a very limited region. Around Loulan the patterns are already different. A symbolic meaning of these ornaments is

highly probable, but it would be only guesswork to try to explain them. We meet the same step-like (zig-zag) design on the loin-cloth Pl. 13:4.

The technical skill necessary for the manufacture of these small baskets is considerable, and it must be admitted at once that the Lou-lan people have mastered this side of the fabrication perfectly. The sense of form and proportion in the decoration is also worthy of admiration; it successfully competes with the graceful incised ornamentations on all sorts of pegs from this site. From a purely technical point of view these baskets stand on the same high level as those of the aboriginal American basket-makers.

These baskets from Lop-nor are a typical product of a primitive people, and we may safely ascribe them to the people buried on the hill. The only instance I know of, where one of these baskets has been found outside an indigenous grave, is STEIN's L. C. 05 from an otherwise Chinese mass-grave near Lou-lan.

Only on one specimen (5. I:1) is the edge finished with a coiled border, otherwise there is no special edging.

All of them have had string handles, except 5. D:2, where no traces can be detected. Four specimens have a more or less well preserved handle consisting of several twined cords fastened on the outside of the wall in a row of vertically placed coils, Pl. 13:1a. (5:70, 140, 141, 146). The remaining ten baskets have, or have had, a handle of a single string of twisted white or brown wool, which has been threaded through the wall a little below the edge, Pl. 14:4. The existence of these handles makes it highly probable that the baskets were articles for daily use and not only made to serve as sepulchral offerings.

Those excavated from the coffins and having their felt cover still in place over the mouth contained remains of the food supplies deposited in them for the benefit of the deceased. Basket 5. F:1 contained a few grains of wheat and millet besides a dried-up substance. The careful chemical examination undertaken by Mr. HJ. LJUNGH has proved it to be a porridge of millet. In the basket 5. A:6 a small amount of a similar substance was found, but no grains of cereals.

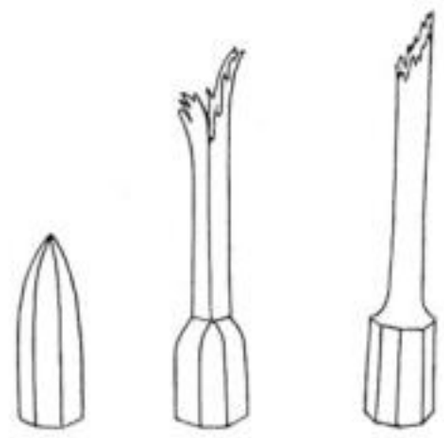
Besides the small baskets there is only one object of basketry, the flat fragment Pl. 14:3, probably from a sifter basket or from such a round basketry plate with thin weave that for instance the Chinese of our day use when steaming their bread. No. 37:3—4 are two fragments of a similar kind found in the second mass-grave in the delta of Qum-darya.

There is only one wooden vessel from this place, the cup Pl. 12:15, made of a single piece and probably having had a handle fastened in the four holes. It may thus have served as a scoop.

Of pottery only one insignificant sherd was found; it was of reddish earthenware and was lost before the collection reached Sweden.

a. Söderbom excavating Grave 5 B (right).





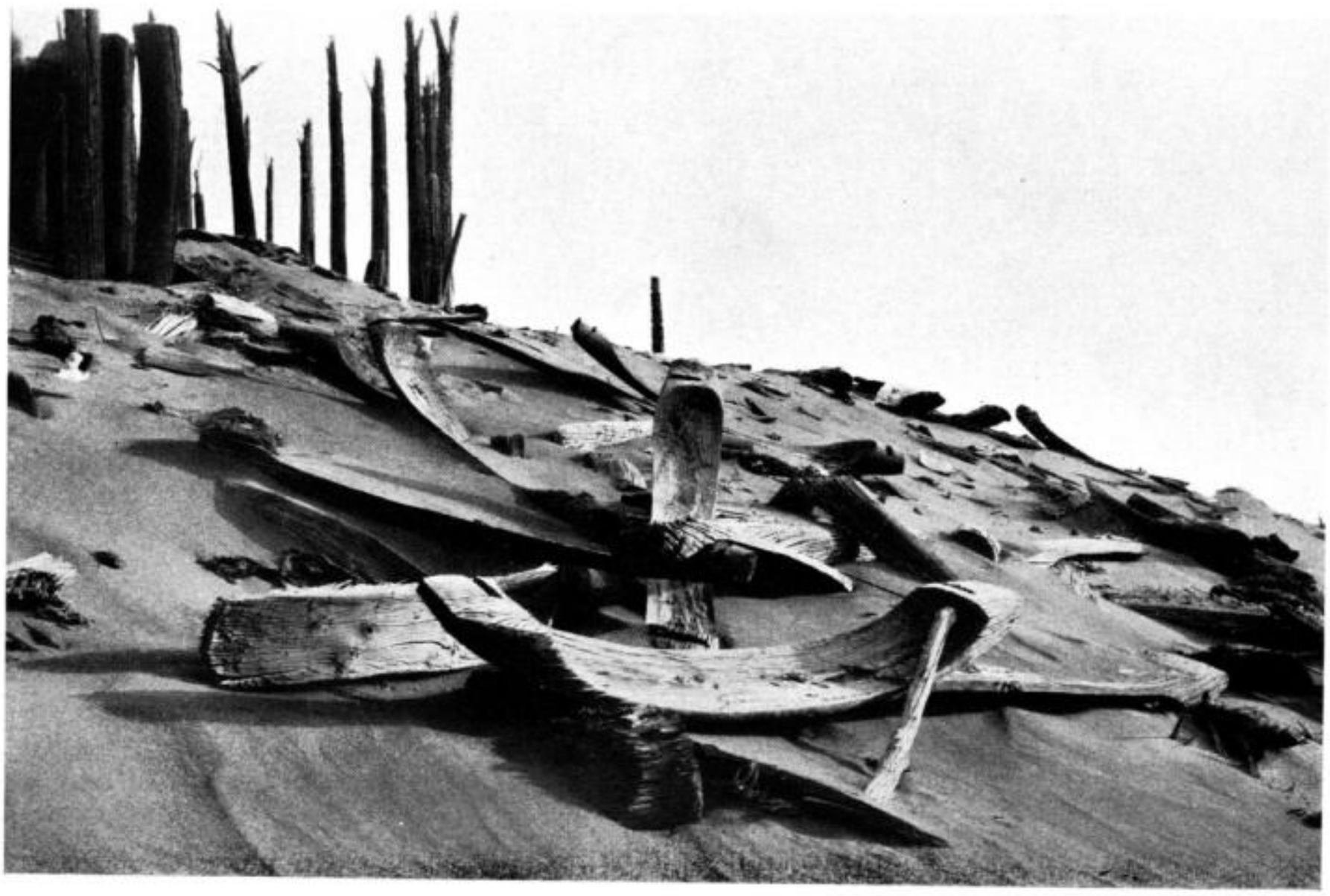
b. Posts of various shapes from the crest of Cemetery 5. From a drawing by Mr. G. Söderbom.

c. The crest of Cemetery 5. (below).





a. View from Cemetery 5 towards the north across the endless desert of sand.



b. Disjointed coffins on the slope of the hill. Cemetery 5.

Wooden objects of uncertain use.

Pl. 7: 1—7 depict some curious objects the meaning or function of which is obscure. The simplest form is seen in Pl. 7: 1, there being two similar specimens. It is a wooden peg, flattened, and tapering towards one end. On one of them there is a small oval hole with burnt edges, and on the other a charred hollow near the middle.

Pl. 7: 6 is a more elaborate specimen. At the broader end one side is flattened and provided with two parallel grooves, and behind these a rectangular depression. A big bunch of horse hair is tied with brown woollen strings round the middle part of the handle. The pointed end has a small step or ledge. The curved shape may be accidental.

Pl. 7: 4 is carved according to the same pattern, but on Pl. 7: 3 the two grooves do not reach the end of the peg. This is also the case with Pl. 7: 2, and there the depression is surrounded by small drilled holes; near the pointed end there is a lashing of brown wool. The fragmentary specimen Pl. 7: 5 has no sunken part but eight transverse incisions instead. When the other fragmentary specimen, Pl. 7: 7, was found, a layer of feathers were attached with red wool to its back. The complete ones are from 53 to 63.5 cm. long.

In coffin 5. C a fragmentary specimen of this kind of object was found which would seem to indicate that they used to be buried with the dead.

The only objects of a shape somewhat similar to the more elaborate specimens are some Siberian Shaman drumsticks; but our specimens are rather long, and there seem to be too many of them. It is, however, more than likely that they had a function in some cult performance.

Another type of object is unknown in existing collections. Some specimens have already been mentioned above. It is made of wood in two similar halves, the flat surfaces laid towards each other, and the members joined with two string lashings. The upper part is more or less spool-shaped, whereas the lower end terminates in a carving representing a horse's hoof or a cow's foot, Pl. 8: 3—5, 7—8. Some of them have a notch at the "front" edge and, as a rule, there is as group of slightly incised transverse lines on the flat sides, clearly visible in Pl. 8: 8. On the specimens Pl. 8: 7—8 the flat sides are charred in on place near the upper end as if the objects had been used to catch some red-hot metal. The length varies between 21.5 and 28.2 cm. Three pairs, Pl. 8: 3—5, were found in coffins; in all five complete and one half set were found. I can see no practical use for these "leg" representations.

Pl. 8: 1, 2, 6 and 9 represent another kind of compound articles consisting of two similar halves which have been tied together with a woollen cord wound round the sunken middle part. The insides of the halves are hollowed out. On Pl. 8: 6 is

shown a complete specimen though part of the wool has now decayed; between the wool and the wood was a layer of feathers. In its hollow inside were lying a few bones from the skull of a large lizard. We cannot state whether the others have had any contents; the half depicted on Pl. 8: 1 was painted red on the inside.

The general shape of these objects is that of a phallus and it is reasonable to regard them as a kind of amulet or to place them among the paraphernalia of the fertility cult.

Two complete specimens and three halves were recovered, ranging in size from 9 to 11.5 cm.

*

The two snake representations, which also belong under this heading have been discussed on p. 73.

Three slender pegs Nos. 5: 50, 52 and 88 (Pl. 9: 3) of uniform thickness but with a thinner part at one end vary in length from 19.8 to 26.5 cm. The specimen 5: 51 has both ends thinner than the middle, and has been wound spirally with a ribbon of some sort. The thinner part has probably been inserted into some hole or socket, but the proper use of these pegs is obscure.

Miscellaneous small articles.

A small oblong, slightly curved piece with transverse incisions is made of dental-bone, Pl. 15: 7. One end is incomplete. The use of it is unknown.

A pair of similar bone objects, Pl. 12: 10—11, are also of unknown use, and so is the bone fragment Pl. 12: 7. In the latter case we might think of a part from a compound bow.

Cord-wrapped bunches of stiff grass, Ephedra twigs, sinew fibres and so on (5: 170—173) may possibly be labelled as some sort of amulets (Stein 1928, Pl. XXVI, L. S. 6. 03 is of the same kind). The splendid specimens on Pl. 11: 6 have already been referred to, and we may also recall such originally wrapped objects as the supposed phallus representations Pl. 8: 1, 2, 6 and 9. Especially from North America parallels to these wrapped objects are known with a core of various materials from the plant and animal kingdoms. The composition of the contents suggest a magical use of these bunches.

Stein has also noticed how this provision of small packets of Ephedra twigs formed a part of the regular funeral practice among the autochthon population of Lou-lan.

In some instances there are striking resemblances between the articles made of perishable materials, e. g. feathers, straw and strings, from the Lop-nor graves and those from N. American Indian sites — at least, judging from the reproductions

in books. The analogies do not depend on any cultural connections but on similar climatic conditions. Both at Lop-nor and in the desert parts of N. America the climate is so arid that objects which in other localities would have perished have been astonishingly well preserved.

The Ephedra plant has been in use in the Chinese pharmacy for a long time. It is not impossible that its medical quality was known as early as 2,000 years ago. I have asked Dr. D. HUMMEL, the surgeon of the expedition, who has experience of Ephedra both as a medical man and as a botanist, if the presence of Ephedra twigs in the coffins could account for the preservation of the mummies. He was not convinced that the Ephedra twigs would act as a preservative agent unless present in large amounts. In Grave 5 A there was a certain quantity; the photo Pl. VI c gives indeed the impression that the belly of the mummy was stuffed with Ephedra twigs. Such small amounts, however, as those placed in the bundles tied on the mantles can hardly have been of any importance as preservatives.

But Ephedra is an ever-green, and this feature, apart from the medicinal qualities of the plant, may have caused primitive peoples to regard it as possessing vitalizing powers, and therefore useful to the dead in this respect.

STEIN does not believe in the interpretation of this burial practice as a symbolic provision to prevent decay of the corpses; he only refers to the potential medicinal qualities of the plant. (Stein 1930—32).

An Ephedra is used nowadays by the Parsees of Bombay to produce their sacred beverage *Homa*. The Parsee priests say that the *Homa* never decays, and they keep it for a considerable time before they use it.

GERHARD BEXELL has kindly furnished me with the following important information about the use of the Ephedra plant among the Tibetans in Nan-shan south of Suchow.

Those of the Tibetans who cremate their dead take merely a few logs as a foundation for the funeral pyre, which consists mainly of Ephedra bushes. During the combustion the Ephedra plants develop a strong aroma which somewhat weakens the stench from the cremation.

The Ephedra plant is also used for the fabrication of incense in this region. The untreated twigs are sometimes used as incense by the poor, or in cases where proper incense is unobtainable.

These facts show the significance of the Ephedra twigs as a predecessor of incense-sticks, and also confirm the view that the use of incense as an offering has developed out of the pure necessity to milden the smell of the burning corpse or the burning sacrificial meat through adding some fragrant agent. In the course of time this detail has become dissociated from its origin, developed into the use of incense sticks and become in itself a sacrifice.

The occurrence in some coffins of grains of wheat and millet show that the people carried on agriculture to a certain extent. It is less likely that these handfuls

of grains have been deposited in the coffins as food supplies for the dead, than that they have been placed there in their character of germinative seeds, i. e. to represent a vitalizing agent for the dead, and thus belong to the complex of the fertility cult.

IV. Discussion.

Having finished the description of Cemetery 5 ("Ördek's necropolis") the question arises: where did these people dwell before they were buried on the hill. Because of the size of the cemetery one would expect a priori a village in the neighbourhood, somewhere along The Small River, the only place where water is obtainable. No traces of any structures, however, were found. The sand dunes cover such large areas in this part of the desert, in many places reaching the shores of the river, that not only one but several ancient villages may be totally buried in the sand. It is worth remembering that all the Lou-lan ruins are found in a region without sand-covering.

The dwellings of this autochthon people can hardly have been very solid. If they really possessed any stationary dwellings we have, perhaps, to reckon with something of the same sort as the present day s a t m a or reed-hut of the Lopliq. When these are abandoned they very soon fall to pieces, and are easily hidden by even a thin layer of drift sand.

On the other hand fragments of pottery and other small *débris* were abundant on many bare clay surfaces between the sand dunes both to the south and the north of "Ördek's necropolis", as is the case nearly everywhere in the Lop desert to the west of the new Lop-nor — relics which partly indicate a mobile population.

This people lived under conditions very similar to the present day Lopliqs. Some must have carried on agriculture, at least to a limited extent. Most of them, and especially the more wealthy, owned cattle and sheep, camels and horses or asses, and all of them practised fishing in the river and the lakes and hunting in the reeds and on the plains. "They are as birds and wild beasts" the contemporary Chinese characterized the Lou-lan people.

As the present day Lopliqs live on very much the same lines as the autochthons of Lou-lan, a few observations may be of interest in this connection. When visiting Sait Mollah in his s a t m a at Yaqinliq-köl, which, by the way, is one of the largest reed-huts in the region, comprising several rooms, I saw Sait's wife spinning wool on one of the "charkhs" used in the Tarim Basin. Afterwards Mr. Chen saw her weaving a kind of rough woollen cloth in white and black, a material which was used for clothing, bags, saddles and the like. This is a coarse material always made locally, which very much resembles the coarse woollen stuff in the mantles from Cemetery 5.

Mr. CHEN also noticed that the family had a small vegetable garden. Their efforts to cultivate wheat here were, however, unsuccessful.

There are large quantities of fish in the lower Tarim of our days, and many of the water-fowl there furnish excellent meat, and their eggs are collected in the season. Of larger game the boar and the antelope should be mentioned.[1] We have no reason to suppose the animal life to have changed since the time of Lou-lan, or, to express it more correctly, the faunae of Lou-lan's time have now returned to the desert along with the life-giving water.

For further discussion of the autochthon population cf. pp. 143—145.

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The activities of the several Japanese expeditions sent to Sinkiang between 1904 and 1911 by Count OTANI and the Buddhist monastery Nishi Hongwan-ji in Kyoto are known to me only through reviews of their publications[2] and the mention which STEIN makes of them. Of the original Japanese publications only one has been obtainable: Mr HANEDA's Description of some documents discovered by the mission OTANI in Chinese Turkistan (Toyo gakuho 1:2, 1911). When the text of this chapter was already in proof the large catalogue of the Korean National Museum in Seul was received (Amamuna & Minamoto: Chosen Kobi-jitsu Taikwan). In the third volume of this work Pl. 82 shows, inter alia, a water bag of skin from Rooran (i. e. Lou-lan). More remarkable are the contents of Pl. 78 (Pl. 79—81 show some of the same objects enlarged). Unfortunately there is no accompanying text, only a statement that the articles originate from the local people in Central Asia (!) As to who collected the things, when and where, the catalogue gives no information. Now the following objects are easily identified as coming from autochthon graves in the Lop desert: the four small baskets on the left in the upper row of Pl. 78, the two felt head-dresses flanking the lower row, and the raw-hide shoe in the centre of the lower row of the same plate. These things are in fact so similar to my own finds from "ÖRDEK's necropolis" that I feel practically certain that they originate from there too. Are these the results of the earlier plunderings of the site? As stated by ÖRDEK the searches of the site were started on the order of the Chinese Amban in Charkhliq. We know that Mr. TACHIBANA of the Nishi Hongwan-ji expeditions was in Charkhliq in both 1910 and 1911. Did he inspire the Amban to bring forth antiquities with the help of the natives, or did the Amban start the action to suit Mr. TACHIBANA? Any of these possibilities seem likely. It seems less probable that Mr. TACHIBANA himself went to "ÖRDEK's necropolis", as ÖRDEK mentioned none but local people among the treasure-seekers.

A footnote in Stein 1928, p. 787, may be of importance in this connection: —

[1] Among the present population hunting does not play any important rôle in the economic life of the people, and the boar is avoided on religious grounds.

[2] PÉRI in BEFEO 1909 p. 626, 1910 p. 652, 1911 p. 465, and MASPERO in 1915 p. 57.

"Vague information received by me in Charkhlik in January 1914 pointed to the discovery by Lop hunters of a site also designated as *Merdek-shahr* somewhere near the lower Tarim since my first visit in 1906. The description given of objects which were said to have been brought from there and sold to Mr. Tachibana suggested the survival of structural remains. I therefore regretted that want of time before I moved into the Lop desert prevented me from making a search for the alleged site."

A third possibility remains: that the collection of Lop-nor antiquities in Seul was brought thither by some other Japanese expedition unknown to me. But especially STEIN's information makes it most likely that these are the objects acquired by Mr. TACHIBANA from the region of Merdek-shahr.

Other of the objects depicted in the Korean catalogue must originate from other places than "ÖRDEK's necropolis" and not necessarily from the Lop desert. The most valuable among them is the pair of shoes on Pl. 80. It is a great pity that nothing is said about these wonderful shoes. Information about their proper place of origin would be most valuable. Their elaborate shape with wide, turned-up, ornamental toes is typically Chinese and may be seen on many terra-cotta statuettes of the Sui and T'ang dynasties (e. g. Sirén, Vol. 3 Pl. 35). They were apparently highly fashionable during this time.

Highly interesting as these finds in the Seul Museum are, I must restrict myself to these notes until I get access to the original Japanese publications, where I hope to find them fully described.

LIST OF ANTIQUITIES FROM CEMETERY 5

Grave 5 A.

5. A: 1. Head-dress of thick white felt, with two woollen strings for tying under the chin. On the left side a group of five inserted pegs, each with a feather tassel at the top. The pegs held in position by a transverse peg wound round with sinew fibres. In the middle of the rear edge a short string is inserted and knotted. H. 25 cm. Pl. 10:2.

5. A: 2. Mantle of coarse, undyed, chiefly yellowish-white wool, in plain weave. Along the lower edge a thin fringe, every three pairs of warps gathered in groups and firmly interlaced to the edge of the fabric and twisted together into the fringe, the ends finished with a loop.

About 10 cm from the fringed side four shoots of weft of red wool, inwards from selvages, at one edge 17.5 cm, at the other 16 cm. Warp of partly yellowish-white, partly greyish-brown yarn, 50 threads to 10 cm. Weft white, 85 threads to 10 cm; double shoots of weft at 5.4 cm. at beginning of fabric, 5.2 at end. At the upper edge (= beginning of weave) loops of warps are inserted in each other. The selvages are strengthened by a thick cord edge made of groups of wefts alternately intertwined. Br. 1.6 cm. Th. 1 cm. L. of winding 1.2 cm.

Size excl. fringe 2.1×1.55 m. L. of fringe about 14.6 cm. Dist. between fringe ends 1.2–2.8 cm.

5. A: 3. Loin-cloth, band-shaped, braided of same material as —: 2, forming a fringe at both ends. Among four of the furthest strands at one edge of the loin-cloth, two and two are twisted into a cord with a knot. Towards the middle of the fringes two adjoining links are tied together. Around one of these and several others is tied a red woollen thread. L. excl. fringe 85 cm. L. of fringe about 44 cm. W. about 5 cm. Pl. 11: 3.

5. A: 4. Bracelet of doubled cord of same material as —: 2, held together of a round flattened bead of yellowish opal. The ends, with tassels, have been knotted together. Full L. 32.7 cm. L. of cord 27.3 cm. Tassels 8.2 and 9 cm. Th. 7 mm. Pl. 9: 12.

5. A: 5. Bunch of four wooden arrows. Two tufts of feathers fastened to each shaft with woollen yarn. Ends bluntly pointed but without arrow-heads. Tied together in the middle with a brown woollen string. L. 72 cm. Pl. 7: 13.

5. A: 6. Small basket, finely plaited. Rounded bottom, nearly cylindrical wall widening at the top. Decorated with triangles, horizontal lines and a step-like zig-zag pattern of somewhat glossy grass laid on top of the ground. Made in a close plain twined weave, and having two three-strand braids, one near the bottom, the other near the mouth. The mouth is covered with a layer of white felt kept in place by a double string wound round the felt. The handle consists of a white woollen string knotted to the edge in two places. The middle part of the handle is twisted and inserted beneath the strings that keep the lid in place. There seems to have been a second handle made of a brown string fastened lower down. The basket contained a few remains of a dried-up material, which has been analyzed and found to consist of millet porridge. H. 16 cm. Diam. about 12 cm. Pl. 14: 5.

5. A: 7. Two cords of reddish brick-coloured wool, with which the mummy's hair was tied behind. L. 45.5 and 49 cm. Th. uneven, 2—7 mm.

5. A: 8. Sample of grains of wheat strewn over mummy.

5. A: 9. Sample of Ephedra twigs strewn over mummy.

5. A: 10. Small dried-up pieces of animal's (?) hide.

5. A: 11. Seven cut-off tips of calves' ears (?).

Grave 5 B.

5. B: 1. Portions of loin-cloth with inserted fringes along the lower edge. Tapestry woven in step pattern in dark reddish-brown wool and undyed, light yellowish wool, partly discoloured to light brown. Warp of same wool. Woollen yarn of fringe, wound firmly and 2-ply in loincloth, th. about 1 mm.; wound more loosely and 4-ply in fringe, th. 3—4 mm. Warp: 4 threads to 1 cm.; weft: about 160 threads to 10 cm.
Fringe fragmentary, consisting of two untwined threads inserted round extreme warp threads of lower edge laid together and twisted. L. of longest preserved thread of fringe 19.3 cm. W. of loincloth 6.8—7.6 cm. Pl. 13: 4.

5. B: 2. Fragm. from mantle of tight rep weave of light brown wool, soft and fine. In one place about 1 cm. broad a weft strip of brownish red wool of same quality as above, in an other place remnants of the same. Warp: 30 threads to 10 cm. Weft: 165 threads to 10 cm.

5. B: 3—5. Fragm. of wooden arrow-shaft or suchlike (partly glued together) decorated with small incised triangles filled with red colour, and arranged in transverse or spiral rows.

5. B: 6. Small wooden tooth with a flat part at one end, which is decorated with three transverse rows of incised small triangles. Probably from a comb. L. 97 mm.

5. B: 7. Lower jaw-bone of a vulture.

Grave 5 C.

5. C: 1. Fragm. of a wooden object of same kind as 5: 119—124. Peg with oval section, tapering towards one end, which has a step. Wound round with coarse brown string near middle part. Present L. 35 cm.

Grave 5 D.

5. D: 1. Cord of fine, glossy wool in reddish cream colour. Folding and loose thread of one end preserved, the other end torn off. L. 90 cm. Th. of cord 9 mm. and of spun thread 2 mm.

5. D: 2. Small basket like No. 5. A: 6, rounded bottom. Pattern consists of horizontal bands and rhombi arranged in oblique zig-zag rows. H. 11 cm. Fig. 14: 8.

5. D: 3. Rear part of arrow-shaft made of reed, with remnants of three-winged feathers. L. 27.5 cm.

5. D: 4—5. Two wooden arrow-shafts, each with two tufts of feathers. Decorated with small incised triangles arranged in transverse and longitudinal rows. L. 76 and 75 cm.

5. D: 6—7. Two fragm. of wooden arrow-shafts decorated with small incised triangles arranged in transverse and spiral rows.

5. D: 8. Wooden pin, gently tapering, with thickened cylindrical head cut in one piece with it, and decorated with five transverse bands, each consisting of two rows of small incised triangles. L. 175 mm.

5. D: 9. One half of a wooden object: peg of even breadth, a little thicker at the ends. One end bluntly pointed. Semicircular section, flat side a little hollowed out. Cf. 5. L: 4 and others. 92×19 mm. Pl. 8: 9.

5. D: 10. Pair of wooden objects made to match: two pegs of about semicircular section

made in the shape of the leg of a cloven-footed beast. The flat sides have lain against one another. A little below the middle the flat sides have some transverse lines, and around them the wood is blackened by fire. L. 23.5 cm. widest part 2.7 cm. (Cf. 5. E: 5, 5. F: 7 and others). Pl. 8: 3.

5. D: 11. Large feather, thinly wound round with reddish wool. Broken. Probably from head-dress. L. 37 cm.

5. D: 12. Two bunches of Ephedra twigs, each tightly wound round with yellow wool, and joined together. The bigger bunch is also wound round with some red and dark-brown wool. L. 14 and 15 cm. Pl. 11: 6.

5. D: 13-14. Two bunches of cut off Ephedra twigs, tightly wound round with brown and yellow wool. L. 17.5 and 15 cm.

5. D: 15. Three bunches of Ephedra twigs wound round a couple of times with yellowish wool.

Grave 5 E.

5. E: 1. Sample of mantle with fringe. Of brownish wool woven in weft rep. 3 cm. at fringe edge double shoots of weft in more open weave. 10.2 cm. inwards from edge of fringe and 17 cm. from selvage there are four shoots of weft of red wool.
The fringe is made of wefts gathered in groups, tightly twisted together and fastened at the lower edge of the fabric. Loops at ends. Th. 3—5 mm. Dist. between fringe ends 12—25 mm.
Selvage 13 mm. with two warps strengthened by a thick cordlike edge made of groups of intertwined wefts (cf. 5. A: 2). Th. of cord itself 7 mm. L. of winding 8 mm.

5. E: 2. Footwear from mummy. Made of rawhide with the hair remaining, on the sole turned outside, otherwise inside. A thick twisted brown cord, 115 cm. long, runs through a perforation in the front part. On middle of instep are remains of small plumage with red wool inserted through the leather. A seam from opening to sole on each side. L. of sole 31 cm. W. 13 cm., across heel 9 cm. Cf. No. 36: 4.

5. E: 3. Wooden arrow-shaft with two tufts of feathers. Painted red and decorated with transverse rows of small incised triangles. Too crooked for effective use. L. 65 cm. Pl. 7: 11.

5. E: 4. Rear part of arrow-shaft of same kind as —: 3.

5. E: 5. Wooden object of same kind as 5. D: 10. The two halves tied together with red wool above the "hoof" (here merely a knob). Has been wound round near the top as well. Near the middle the flat sides have faintly incised transverse lines surrounded by red colour. L. 21.5 cm. Pl. 8: 4.

5. E: 6. Three kinds of woollen strings. Red, and undyed greyish-yellow.

Grave 5 F.

5. F: 1. Small basket, neatly plaited; decorated with oblique zig-zag bands, triangles and horizontal bands of grass. Besides there are two bands of three-strand braid. Has had a handle of brown woollen string inserted through the wall. Contained grains of wheat and dried-up millet porridge. H. 14.5 cm. Diam. about 11 cm.

5. F: 2—3. Two arrow-shafts of tamarisk twigs, each with two tufts of feathers. Somewhat bent. L. 77 cm. —: 2 Pl. 7: 14.

5. F: 4—5. Rear parts of two arrow-shafts of same kind as —: 2.

5. F: 6. Thin tamarisk twig. L. 70 cm.

5. F: 7. Wooden object representing the leg of a hoofed beast; made in two halves to match, which are bound with string in two places. A small bronze ring fastened in the wool wound round near the hoof. Four transverse incisions just above the hoof. 25×3.4 cm. Pl. 8: 5.

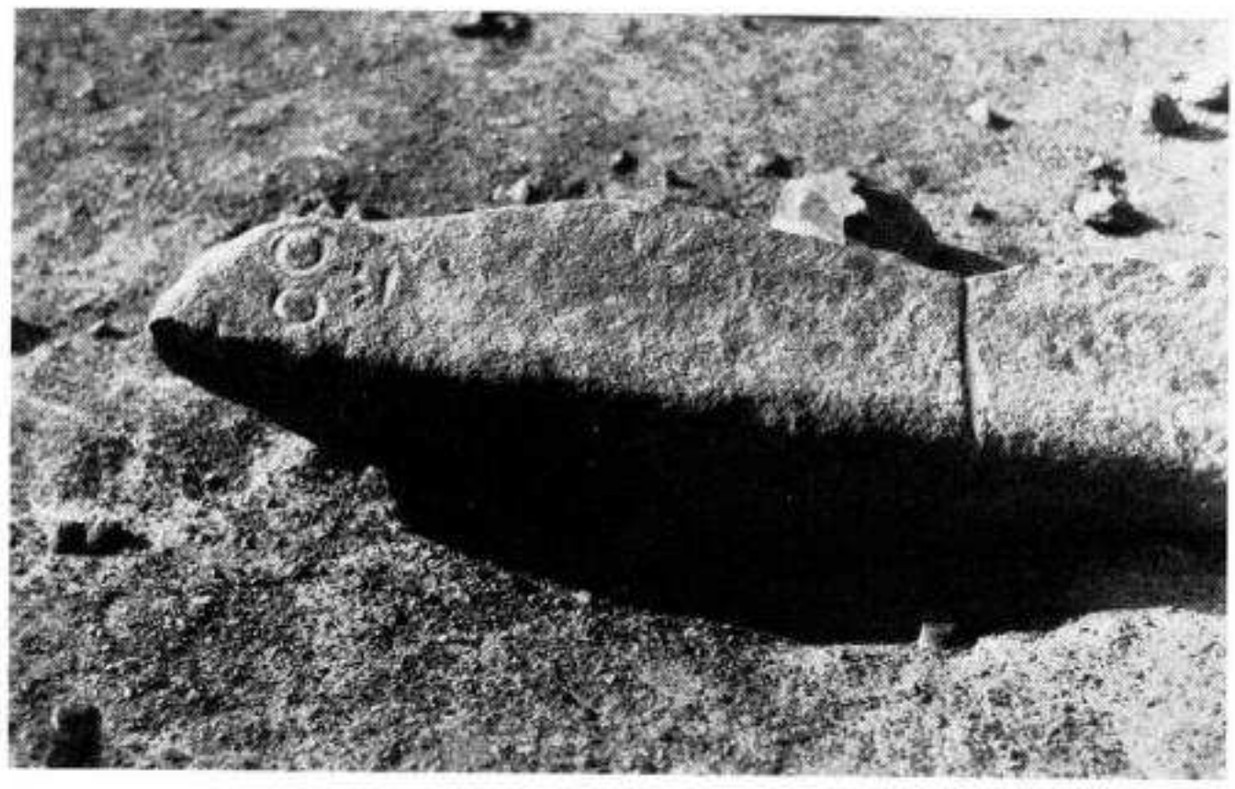
Grave 5 G.

5. G: 1. Small basket, neatly plaited, with the usual design of horizontal and zig-zag bands laid on top of the ground work of plain twined weave. Two bands of three-strand braid. Has had a handle of string inserted through the wall. H. 13 cm. Diam. about 9 cm.

5. G: 2. Fragm. of basket-work, probably from large, shallow tray-basket. Double twined open-work. Pl. 14: 3.

5. G: 3. Long smooth peg in the form of a straight serpent with a spool-shaped object in its mouth. The back of the serpent is covered with small incised rhombi filled with red colour, forming zig-zag bands. The flat belly has transverse lines, every second one with a row of small pointed triangles filled with red. Just behind the middle part a drilled hole. L. 69 cm. Diam. 1.1 cm. L. of object in mouth 15 cm. Pl. 7: 9 and Fig. 14: 3.

5. G: 4. Fragm. of wooden arrow-shaft with feathers attached to it with red wool.



a. Fallen baba stone near Ch'ai-o-p'u.



b. Cemetery 5. The side of the hill is covered with disjointed coffins and fallen down posts and "oars".



a. Winding bays of Lake Pataliq-köl.



b. A small branch of the dying Small River near camp B 71.

Decorated with transverse and spiral bands of small incised triangles.

5. G: 5-10. Six similar arrow-shafts, probably tamarisk wood, each with two tufts of feathers. Decorated with transverse bands of small incised triangles. L. 72—69 cm. —: 9 Pl. 12: 14.

5. G: 11. The greater part of a wooden arrow-shaft of same kind as the preceding ones; the feathers missing.

5. G: 12. Fragm. of arrow-shaft with three groups of faint, transverse lines.

Grave 5 H.

5. H: 1. Child's head-dress of dark greyish-brown felt. At lower edge is inserted a small piece of grey woollen yarn, chin-cord? H. about 14 cm. Diam. about 12 cm. Pl. 11: 5.

5. H: 2. Child's bracelet. Bead of light green jade-like stone with brown cord threaded through the hole. Diam. of bead 13 mm. Pl. 9: 11.

5. H: 3. Small basket, neatly plaited, of the common type though the bottom somewhat flatter than usual. Has had a handle of brown string inserted through the wall. H. 10 cm. Diam. about 7.5 cm. Pl. 14: 2.

Grave 5 I.

5. I: 1. Small plaited basket, the design almost effaced through wear. Near the bottom a broad band of three-strand braid, and a narrow one round the edge, which is also finished with some extra coils. Once covered with a white felt lid. Remains of a handle of white string. H. 13 cm. Diam. about 13 cm.

5. I: 2. Wooden arrow-shaft with two tufts of feathers fastened with red wool. Decorated with four groups of transverse lines with thin small triangles. Longitudinal bands of triangles between the groups. Smoothened point. L. 76 cm.

5. I: 3. Fragm. of the rear end of a wooden arrow-shaft with a tuft of feathers and transverse and longitudinal rows of deeply incised triangles forming zig-zag patterns. Pl. 12: 2.

5. I: 4. Wooden peg with round section, tapering towards one end. The other end has a step; the thinner part is broken off. L. 31.5 cm.

Grave 5 J.

(What is left of the contents of a plundered coffin near grave 5 A).

5. J: 1. Pointed head-dress of dark brown felt with white, elaborate ornamentation of horizontal, tightly twisted strings, which have been fastened with back-stitches in rows along the head-dress in four places; only a quarter remains. At the lower edge are four rows of stitches from the chin-cord. The lower edge finished with thin scallop stitch of similar strings. Top somewhat frayed. H. about 25 cm. Pl. 10: 6.

5. J: 2. Wooden arrow-shaft, crooked, with two tufts of feathers. Neatly decorated with transverse and longitudinal rows of small incised triangles, filled with red colour. L. 72 cm. Fig. 14: 1.

5. J: 3—4. Two fragm. of wooden arrow-shafts, each with a tuft of feathers and decorated with transverse rows of incised triangles.

5. J: 5. Wooden arrow-shaft, somewhat crooked. Has had two tufts of feathers and is decorated with two groups of transverse rows built up of small incised triangles. L. 67 cm.

5. J: 6. Fragm. of wooden arrow-shaft with transverse and spiral rows of small incised triangles.

Mummy 5 K.

5. K: 1. Head-dress of yellowish-white felt, pointed, with four transverse red woollen cords and remnants of a split ermine skin, fastened with light-red woollen threads inserted in the felt. The head of the ermine hanging down in front. Chin-cords of the same wool as the felt. Short string of similar wool inserted in the middle of the rear edge and knotted together. H. about 20 cm. Pl. 11: 4.

5. K: 2. Necklace of four brown grass-and-hemp strings and four dark-red woollen threads laid together and wound with two pale red woollen threads, which were probably placed at intervals of 12—14 mm. In one place a small feather tassel fastened with thin sinew-fibre, in another place a diminutive grey stone bead. Diam. of bead 3 mm. Th. 1 mm.

Grave 5 L.

5. L: 1. Small flat bead of shell. Diam. 5 mm. Cf. No. 5: 18.

5. L: 2. Wooden pin, gently tapering, with thickened cylindrical head. The head

is decorated with seven transverse zig-zag bands which are formed through small, very pointed, incised triangles. L. 15.3 cm. Fig. 14:7.

5. L:3. Wooden pin of same kind as —:2 but with thicker head, having eleven groups of triangle-bands. The pointed end broken off. Found sticking in the woollen fabric —:6. L. 17.3 cm.

5. L:4. Wooden object consisting of two halves, of the same kind as 5. D:9 etc. When found the now decayed red wool was neatly wound round a layer of feathers in the sunken part of the two halves. One end straight, the other blunt-ended. The interior deeply hollowed out; it contained a few bones from the head of a large lizard. The two halves are of uneven length: 11.5 and 10.5 cm. Diam. 2.6 cm. Pl. 8:6.

5. L:5. One half of an object identical with —:4. The hollowed part is painted red. 9×2.7 cm. Pl. 8:1.

5. L:6. Two fragm. of an undyed, pale yellowish-white woollen mantle in rep weave. The warp twisted somewhat harder than the weft. Selvage preserved at one part, strengthened by a thick cord.

5. L:7. Small bundle of reddish-brown wool, wound round in two places with the same kind of thread, in one of which a small feather is inserted.

Finds mainly from the surface of Cemetery 5.

(5:1—5:44 from the flat eastern end of the hill.)

5:1—2. Two willow-leaf-shaped arrow-heads of light-green silex and brown chert. Rather blunt-ended, of inferior make. —:2 is slightly polished. L. 39 and 41 mm. Pl. 12:4—5.

5:3. About half of a leaf-shaped arrow-head of green silex. Pl. 12:6.

5:4. Leaf-shaped arrow-head ? of polished slate. L. 42 mm. Br. 12 mm. Pl. 12:3.

5:5. Whetstone of slate, one edge has some transverse lines. 97×25 mm.

5:6. Flat bead of green, flamy serpentine. Diam. 9 mm. Pl. 15:8.

5:7—15. Nine barrel-shaped beads of striated, grey and white opal. L. 12—8 mm. Pl. 15:16.

5:16. Eight small beads of shell (a *Spondylus)* attached to the original cord.

5:17. Ninety-six small shell beads, mostly with the original string remaining in the holes.

5:18. Three thin, flat beads of shell. Diam. 6 mm. Pl. 15:9.

5:19. One hundred and twenty-four small beads of shell of same kind as —:21.

5:20. One hundred and fifty-five small beads of shell of same kind as —:21.

5:21. Ninty-three small beads of shell. Diam. 5—2 mm. Pl. 15:15.

5:22. Small flat, oblong object, slightly curved, of light-green dental bone (?). The convex surface has ten transverse lines 25×6 mm. Pl. 15:7.

5:23. Fragm. of corroded, somewhat concave bronze ring-fitting.

5:24—25. Two small bronze fragm., possibly of two-winged arrow-points.

5:26. A few corroded bronze fragm.

5:27. Wooden cup, made in one piece. Near the edge there are two pairs of holes 7 cm. from each other. H. 11 cm. Diam. 13.5—12.5 cm. Pl. 12:15.

5:28. Rectangular wooden object, handle ? One side convex, the other concave, at each end a moulding. 79×18 mm. Pl. 9:7.

5:29. Small wooden object of nearly the same shape as —:28. 51×14 mm.

5:30. Fragm. of round wooden peg with four globular mouldings and two transverse rows of small triangles filled with red. Pl. 9:8.

5:31—39. Nine fragm. of arrow-shafts or pegs of wood, decorated with transverse or longitudinal rows of small triangles filled with red.

5:40. Two-winged arrow-point of bone with large barbs and a socket to receive the shaft. On each side six incised lines, V-shaped. 88×18 mm. Pl. 12:9.

5:41. Small bone object of unknown use. A straight piece with an oblique projection. Decorated with four groups of transverse lines. A groove follows one edge of the projection and continues along the shorter part of straight member. L. 73 mm. Pl. 12:11.

5:42. Bone object of same type as —:41 but with broken points. Pl. 12:10.

5:43. Fragm. of bone lamella with one flat and one convex surface, the latter

having five V-shaped incisions. 65×13 mm. Pl. 12:7.

5:44. One end of a thin bone lamella with a transverse line. From a bow? Br. 27 mm. L. 106 mm.

(5:45—5:74 found at the W. end of the palisade).

5:45. Wooden arrow-shaft with two tufts of feathers and decorated with transverse and spiral rows of small incised triangles filled with red. Rather crooked. L. 70.5 cm.

5:46. Wooden arrow-shaft, very crooked, decorated with four groups of transverse incisions, each consisting of four rows of small triangles with the points turned towards each other. The arrangement of these groups shows that there have been two tufts of feathers. L. 75 cm. Fig. 14:9.

5:47. Wooden arrow-shaft, rear end fragmentary. Decorated with groups of transverse and spiral rows of small triangles. L. 63 cm.

5:48. Wooden peg representing a serpent (cf. 5. G:3) with a spool-shaped object in its mouth. Along the back a double zig-zag ribbon, and on the sides two extended zig-zag ribbons, all consisting of small incised triangles. On the lower side of head and neck there are thin incised lines, and along the belly a nearly straight band of the same kind as on the sides. 26 cm. from the head a small hole through the body. L. of peg in mouth 14.2 cm. Tail broken off. Present L. 57.8 cm. Pl. 7:8 and Fig. 14:4.

5:49. Long black feather, the shaft wound round with red wool, the barbs however being left free. A pointed peg or pin is attached to the lower end. Probably a plume from a head-dress. L. 37 cm. Pl. 9:10.

5:50. Wooden peg with round section, one end thinner than the other. L. 26.5 cm.

5:51. Wooden peg with a thinner part, 26 mm. long, at one end. The other end has had a similar thin part. A ribbon or suchlike has been wound round it. L. 25.5 cm.

5:52. Broken peg of same kind as —:50 and 51. L. 19 cm.

5:53. Fragm. of wooden arrow-shaft (?) decorated with longitudinal rows of small incised triangles.

5:54. Portion of tamarisk twig, one end charred, decorated with a spiral row of small triangles carelessly cut in the bark. L. 19 cm. Pl. 9:4.

5:55. Cylindrical head of a wooden pin of same kind as 5. L:3 and many others. Decorated with fourteen transverse rows built up of small incised triangles with the points turned towards each other and filled with red. The rows are so narrow that the effect of the triangles is that of a zig-zag band. L. 95 mm. diam. 13 mm. Pl. 9:5.

5:56. Wooden comb consisting of seven long and four short teeth pierced alternately through a piece of sinew. Each long tooth has a flat head decorated with seven transverse zig-zag bands formed through two lines of small incised triangles, filled with red, and with the points turned towards each other. On the back the decoration is inferior and the seven rows are placed obliquely. L. 18 cm. W. across sinew 6.5 cm. Pl. 9:1.

5:57. Long tooth from a comb of same construction as —:56, stuck in a piece of sinew. Decorated with five transverse rows, each consisting of two lines of small incised triangles. Along the back are plain, transverse lines. L. 18.8 cm.

5:58. Tooth of same kind of comb as —:57, with same decoration. L. 18.2 cm.

5:59. Tooth of same kind of comb as —:57, but less well made. L. 18 cm.

5:60. Tooth of same kind of comb as —:57, with unfinished decoration: the transverse lines are incised but only two triangles are finished. The flat head painted red, as is the case with several of the preceding ones. L. 18.5 cm.

5:61—66. Six smooth teeth, apparently from a comb, the teeth of which were kept together by a sinew. There were no long teeth in this case. L. 87 mm. Cf. No. 36:14.

5:67. Three small fragm. probably of same tooth, which is slightly carved.

5:68. Bone object, probably used as pin for fastening the mantle. A long straight tapering part and perpendicular to it a projection near the thicker end. On the long part seven transverse lines. Model of a hoe or some weapon *(Ko?)* L. 127 mm. Br. across projection 35 mm. Pl. 12:16.

5:69. Bone arrow-point, conical, with socket. Round the base seven incised lines. L. 11 cm. Diam. 1 cm. Pl. 12:12.

5:70. Plaited basket with nearly effaced ornaments, apparently oblique zig-zag bands. On the upper part crescent-shaped ornaments enclose warp-stems in pairs. Fragm. of handle, made of twisted yellowish string, fastened to the wall with five separate coils at each side. H. 19 cm. Diam. about 11 cm.

5:71. Piece of white felt, probably the lid of —:70.

5:72. Cord of yellowish-white, undyed wool. Th. 5—6 mm.

5:73. Small peg with a bushy tuft of feathers fastened to it with red wool. Apparently a plume from a head-dress. L. 17 cm.

5:74. The greater part of a weasel's skin tied to a piece of white felt, apparently from a head-dress.

(5:75—5:93 were found in the sand above the coffins E and F).

5:75. Wooden arrow-shaft with two tufts of feathers attached to it with red wool. Neatly decorated with transverse and spiral rows of small incised triangles filled with red. L. 76 cm. Pl. 7:12 and 12:8.

5:76—78. Three wooden arrow-shafts with two tufts of feathers and decorated in the same fashion as —:75. L. 73.5 and 77.5 cm.

5:79—80. Two wooden arrow-shafts, crooked, and having originally two tufts of feathers; decorated in the same fashion as —:75. L. 75 and 78 cm. —:80 Fig. 14:2.

5:81—84. Four fragm. of wooden arrow-shafts of same kind as the preceding ones, though two of them have no triangles, only lines.

5:85. Arrow-shaft of tamarisk wood. Has had two tufts of feathers but otherwise undecorated. L. 78 cm.

5:86—87. One complete and one broken wooden arrow-shaft, each decorated with a spiral line. L. 67 and 53 cm.

5:88. Wooden peg of same kind as 5:50. L. 198 mm. Pl. 9:3.

5:89. Plumage from head-dress. A long black feather, thinly wound with red wool, and four tufts of short brown feathers each tied to a pointed peg. The whole plumage kept together by a cross-going peg entirely wound with red wool. On one side a piece of a weasel's skin. Longest feather 39 cm. Pl. 10:8.

5:90. Small peg with a tuft of feathers in the upper end. Part of plume of a head-dress. L. 22.5 cm. Pl. 9:9.

5:91. Peg with feathers, of same kind as —:90.

5:92. Peg with a black feather, attached to it with red wool. The upper part broken off. From a head-dress.

5:93. Cord of brown wool with a knot at one end. Probably handle of a basket. L. 31.8 cm. Th. about 1 cm.

Surface finds in general, Cemetery 5.

5:94. Wooden arrow-shaft, rather crooked, with one remaining tuft of feathers a little above the middle, the upper tuft lost. Decorated with transverse and spiral rows of small incised triangles filled with red. L. 77 cm.

5:95-101. Seven fragm. of wooden arrow-shafts, some thick and some thin, with portions of one or two tufts of feathers and decorated in the usual way with small triangles.

5:102-109. Eight fragm. of wooden arrow-shafts with the usual ornaments of small triangles. —:103 Fig. 14:10.

5:110. Arrow-shaft of tamarisk wood with a spiral line with a few incised triangles, all turned in same direction. L. 70 cm.

5:111. Wooden arrow-shaft with the usual decoration filled with red. Obliquely pointed at one end. L. 57 cm.

5:112. Fine arrow-shaft of tamarisk wood with four groups of transverse ornaments, each consisting of five lines with small triangles turned in the same direction. L. 78 cm. Fig. 14:5.

5:113-114. Two rather heavy wooden arrow-shafts with a marked groove in the rear end to receive the bow string. L. 63.5 and 65.5 cm. —:113 Pl. 7:10.

5:115. Wooden peg of same type as 5:50, thinner at one end, pointed at the other. L. 37.5 cm.

5:116. Piece of a reed.

5:117. Flat wooden peg tapering towards one end. 23 cm. from the broad end there is a small oval hollow with burnt surface. L. 58.5 cm. Br. 3.9—1.5 cm. Pl. 7:1.

5:118. Wooden object of same type as —:117 but the narrow part has a more round-

ed section. One side flat, the other rounded. 24 cm. from the broad end there is a shallow, burnt cavity. L. 53 cm. Br. 3.8—1.2 cm.

5:119. Wooden object of same main type as —:117 and —:118 but more elaborately shaped. The broad end has one flat surface with two longitudinal grooves and below these a square depression. Round the middle a bunch of horsehair is tightly wound with brown strings. The pointed end, which has a small step, is bent probably unintentionally. L. 63.5 cm. Br. 4 cm. Pl. 7:6.

5:120. Wooden object of same type as —:119. The two longitudinal grooves at the broader end do not reach to the edge. The rectangular depression is surrounded by small drilled holes. At the step near the pointed end the object is wound round with brown wool. L. 59 cm. Br. 5 cm. Pl. 7:2.

5:121. Wooden object of same type as —:119. L. 61 cm. Br. 4.5 cm. Pl. 7:4.

5:122. Wooden object of same type as —:120. The two longitudinal grooves do not reach to the edge of the broader end. Oval section. Blackened by fire in two places. The pointed end broken off. L. 40.5 cm. Br. 4.2 cm. Pl. 7:3.

5:123. The broader part of a wooden object of same type as the previous ones. The two longitudinal grooves are more shallow and longer than usual, and the square depression below them is absent. The rounded side of the broader part has been covered with feathers (now nearly all decomposed) kept in place with red strings. L. 38 cm. Br. 5.7 cm. Pl. 7:7.

5:124. The broader end of a wooden object of the same type as the preceding ones. The longitudinal grooves are deeper than usual, and immediately behind there are eight transverse grooves. Semicircular section. L. 23 cm. Br. 3.8 cm. Pl. 7:5.

5:125. Two wooden objects, made to match, in the shape of a leg of a hoofed beast. Cf. 5. D:10. In the middle of the front part a notch is carved across both halves. Near the broader end the insides are burnt as if the two halves had clasped a glowing metal object or something similar. Immediately below this place are seven incised lines on each half. L. 25 cm. Br. 2.8 cm. Pl. 8:8.

5:126. Wooden object in two halves of same type as —:125. L. 27.5 cm. Br. 2.5 cm. Pl. 8:7.

5:127. One half of a wooden object of same type as —:125. L. 28.2 cm. Br. 2.9 cm.

5:128. Wooden object in two halves, made to match, of same type as 5. L:4. Roughly made. The flat sides hollowed out. L. 94 mm. Br. 18 mm. Pl. 8:2.

5:129. One half of wooden object of same type as —:128 but very well made. The hollowed out part is painted red. L. 11.1 cm. Br. 3 cm.

5:130-135. Six wooden pins of same type as 5. D:8. The cylindrical heads decorated with transverse rows of small incised triangles with red colour still partly preserved. L. 249-179 mm. —:131 Fig. 14:6.

5:136. Small wooden comb consisting of six equal teeth fastened side by side in a piece of sinew. The upper part of the pegs are broader, somewhat flat and decorated with some carelessly incised lines. L. 95 mm. Br. 48 mm. Pl. 9:6.

5:137. Wooden peg, probably from a comb of same type as 5:56. The broader, flat upper part has five transverse rows of small incised triangles, the other side has only some transverse lines. L. 18.5 cm.

5:138. Wooden pin of same kind as —:130—135. The cylindrical head decorated with nine narrow rows of triangles with the points turned towards each other and giving the impression of a zig-zag band. L. 18.4 cm. Pl. 9:2.

5:139. Small basket of the usual type with part of the dark-brown felt lid preserved. Decorated with horizontal ribbons and, probably, oblique zig-zag bands. There is also a three-strand braid. Has had a handle of brown string. H. 12.5 cm. Diam. about 10 cm. Pl. 12:13.

5:140. Basket of the usual type, the upper part damaged. Decorated with two horizontal rows of triangles and oblique bands with serrated upper edge, giving the same step-pattern that is so common on these baskets. Two broad three-strand braids. The handle has been fastened to the outside of the wall with some separate coils. Present H. 20 cm. Diam. about 16 cm. Pl. 13:3.

5:141. Basket of the usual type with preserved handle of twisted strings firmly wound round with woollen string. Handle fastened to outside of wall with some separate coils. The pattern, partly unclear because of wear, consists of oblique bands, the upper side of which form steps, the under side with distinct points. One three-strand braid at the bottom of the basket, one near the rim. H. 21 cm. Diam. about 13 cm. Pl. 13:1.

5:142. Basket of the usual type. The pattern is indistinct but has consisted of the same elements as on other baskets from here, though more varied. The bottom has a broad three-strand braid, and on the upper part of the wall there are three narrow ones. The handle has been made of a string threaded through the wall. H. 16 cm. Diam. 10 cm. Pl. 14:1.

5:143. Basket of same kind as —:142 but with only two three-strand braids. H. 16 cm. Diam. 11 cm.

5:144. Small narrow basket of the usual type with oblique zig-zag bands and two three-strand braids. Handle of brown woollen string H. 14 cm. Diam. 6.5 cm. Pl. 14:4.

5:145. Fragm. of basket of same kind as the preceding ones. H. 17 cm. Diam. has been about 12 cm.

5:146. Fragm. of basket of same kind as the preceding ones, though larger. The handle has been fastened to the wall with separate coils. Present H. 29 cm. Pl. 13:2.

5:147. Loin-cloth in plain weave and with fringe, of coarse unevenly twisted greyish brown wool (camel wool?) Three cross-stripes of fine red wool, about 2 cm. wide, made in the weft, one in the middle, the others about 5—6 cm. from the ends.

The fringe partly torn off, consists of extended warps at both ends and extended wefts at lower edge of loin-cloth. L. excl. fringe 76 cm. W. about 10.5 cm. The fringe at one end 30 cm., at the other rather uneven, longest threads 66—70 cm.; the fringe of the lower edge 30 cm. long.

Loin-cloth open, joined only by a double knot of the upper selvage's 8 warps, tightly twisted into a cord. Pl. 11:7.

5:148. Loin-cloth, band-shaped, torn at both ends. Band of fine and even, braided wool, violet to brown. Inserted fringe consisting alternately of narrower parts of the same yarn as in the band and of wider and broader parts of thick wool in light brown. W. of loin-cloth 4—5 cm. L. of preserved part 104 cm. Fringe occupies 66.5 cm. in the middle. Only two light-brown threads of the fringe have their original length, about 35 cm. Pl. 12:1 (with the extremities excluded).

5:149. Two fringed ends of a band-shaped loin-cloth of same braided material as —:148. Each band divided into six smaller braids, the threads of which continue in the thick strings of undulated wool, forming the ends. Th. of woollen strings at fixtures about 13×8 mm. L. of longest strings 48.7 cm. The plaiting-threads of the bands and the strands of the fringe all in one piece. Pl. 11:1.

5:150. Piece of large mantle of originally yellowish-white wool. Woven in weft rep. Warp firmly twisted, th. 1—1.9 mm. 30 threads to 10 cm. Weft looser, th. 1—2 mm. 130 threads to 10 cm. Selvage with two warps strengthened by cordlike edge, br. 1.2 cm., made of groups of intertwined wefts (Cf. 5. A:2). Th. of cord 7 mm. L. of winding 7 mm., weft stripe 2 cm. wide = 11 shoots of weft of light wine-coloured wool, th. 1.5—4 mm., shoot over two and under two warps. Pl. 13:5.

5:151. Piece of mantle woven in weft rep of undyed dark-brown wool (sheep?), in warp partly greyish yellow, light brown (camel?). Warp firmly twisted, th. about 1.5 mm. 50 threads to 10 cm. Weft loosely twisted, th. 1 mm. 250 threads to 10 cm. Selvage br. 8 mm. at one side, with two warps; weft yarn not made in one, ends of each shoot held by the next and so on.

In brown fabric weft stripe, 2 cm. wide — 8 shoots of weft — of light brick-coloured wool, partly faded, th. 4 mm. Shoot of weft over two and under two warps.

5:152. Pieces of mantle woven in weft rep of light yellow-white wool, fine and soft. Two incomplete weft stripes, w. 3 cm., on top of each other in tapestry weave of reddish brown wool, of same quality as the preceding one. Dist. betw. stripes 17.9 cm.

Warp brownish yellow, firmly twisted, th. 0.9—1.5 mm. 30 threads to 10 cm. Weft looser, th. 1—1.5 mm. 160 threads to 10 cm. Placing of red stripes on garment indefinable.

5:153. Pieces of mantle woven in weft rep of undyed light brownish yellow wool, fine and soft. Warp tightly twisted, th. 0.9—1.5 mm. 50 threads to 10 cm. Weft slightly twisted, th. about 1.8 mm. 120 threads to 10 cm. Selvage on two fragm. strengthened by a cordlike edge similar to that of 5. A:2. Th. of cord 6 mm. L. of winding 4 mm.

5:154. Plume from a head-dress, consisting of five pointed pegs each with a tuft of feathers attached to it with yellow wool. The different plumes are kept apart by a transverse peg bound to them with yellow wool. L. about 21 cm. Pl. 10:5.

5:155-156. Two feathered pegs, plumes from head-dresses. L. 23 and 20 cm.

5:157. Large head-dress of dark, greyish-brown felt. Five pegs stuck through

the felt near the edge, forming a group; their plumes are worn away. Below the pegs are remnant stitches of a cord. At the lower edge a chin-cord is fastened with three stitches, the cord being made of the same wool as the felt. H. about 28 cm. Pl. 10:9.

5:158. Semicircular head-dress of dark greyish-brown felt with two red 4-ply strings round it. Small fragm. of a weasel skin fastened with red wool, inserted in the felt and wound round the skin. Remaining stitches at opposite parts of lower edge from chin-cords. Short string of same wool inserted at the middle of the rear edge and knotted. H. about 24 cm. Pl. 10:7.

5:159. Pointed head-dress of dark brown felt with elaborate cord ornamentation in dark red wool. A remaining feather peg is wound round with red wool all over. The top open, damaged. The lower part has been finished with scallop stitching in dark-purple yarn. The chin-cord has been made of similar yarn. H. about 27 cm. Pl. 10:3.

5:160. Small pointed head-dress of dark-brown felt with elaborate string ornamentation of red, 3-ply wool. Remnants of split weasel skin fastened with red woollen yarn inserted in the felt and knotted round the skin. The head-dress has one peg which has carried a plume. The lower edge is fragmentary and finished with scallop stitching in red. At the lower edge three rows of stitches for the chin-cord, which is missing. H. about 28 cm. Pl. 10:1.

5:161. Head-dress of dark-brown felt with elaborate string ornamentation of light reddish-yellow wool. Remnants of a split weasel skin fastened with the same kind of strings. The lower edge finished with thin scallop stitching of similar yellow wool. H. about 24 cm. Pl. 10:4.

5:162. Piece of dark-brown felt used as basket lid (Diam. about 10 cm.) fastened with brown woollen string, wound three times round the lid.

5:163-168. Six different strings or cords, partly with knots. —:166 of wool and plant-fibres, the rest of wool.

5:169. Piece of dark green chert (or jade) with two surfaces polished.

5:170. Bunch of sinew-fibres tightly bound together with light red, light green and beige wool. L. 10.5 cm.

5:171. Bunch of Ephedra twigs, grass and feathers, bound together with coarse twisted strings of one red and one dark-brown thread. L. 17 cm. Cf. 5. D:13—14.

5:172. Thin bunch of stiff grass bound together with dark brown strings. L. 38 cm. Pl. 9:13.

5:173. Small bunch of stiff grass joined to a similar smaller bunch, both bound together with grass or vegetable fibre. L. 16 cm.

5:174. Long black feather, wound round with yellow wool. Broken in two. Original L. about 50 cm.

5:175-178. Fragm. of four pegs and feathers bound together with wool.

5:179. Cord composed of brownish purple wool, fine and even, the core consisting of five threads, torn off at the ends, and tightly wound round with untwisted yarn. Probably handle of basket or suchlike. Compl. L. 13.5 cm.

5:180. Cord composed of nine greyish hemp (?) strings of different length, torn at the ends, the longest about 51 cm. Towards the middle tightly wound with brownish red wool. Probably the handle of a basket.

5:181. Woollen cord consisting of five strands, of which four are pale rose-coloured and two brown. In two places the cord is wound with dark brown wool. Compl. L. 45 cm. Th. 7—9 mm.

5:182. Two ends of coarse, dark-brown wool, of goat's hair? Th. 3—5.

G. WATCH-TOWER AT THE SMALL RIVER.[1]

ÖRDEK also mentioned a burial place situated about 30 li to the east of Cemetery 5. We never made any attempt to find it, as we could not venture too far into the sand desert away from the water with our poor beasts of burden in such a sweltering hot season.

[1] The description of this watch-tower ought to have been included in the chapter about the ruins, but as the ancient remains along The Small River have been treated in the order in which they were discovered I have found it convenient to retain it here.

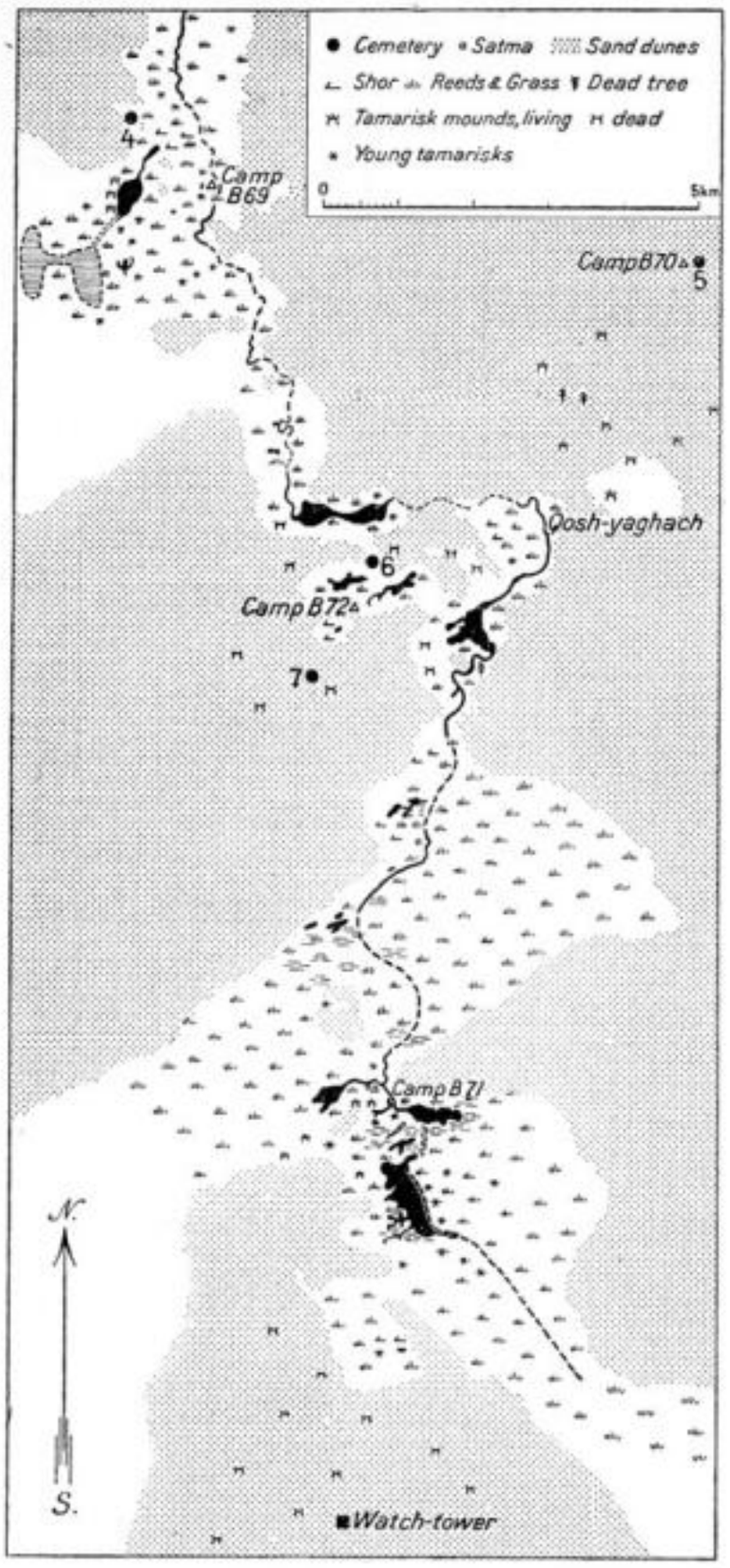


Fig. 18. The middle part of The Small River, with archaeological remains.

Instead we turned to the south in search of a ruined watch-tower of which ÖRDEK spoke. He also mentioned another tower, said to be situated 20 li to the north-west of Cemetery 5. If we reckon the ordinary li as between 4- and 500 m. this would take us very near The Small River and Lake Pataliq-köl, traversed by it. ÖRDEK's li, however, were more elastic than any other Turk's I have met. The limits between which his li used to fluctuate, during the short period I had occasion to control it, were 100 m. and 1000 m.

The first mentioned watch-tower was easily found nearly 18 km. SSW of Cemetery 5, and situated among sand dunes, 6—7 m. high, to the west of The Small River. The tower is built of stamped clay. The continual erosion by wind has worn away the sides considerably, and the shape is now conical, Pl. XIV a. It rises about 7 m. above the ground, the base was probably square originally; it measures 16 × 19 m. It is surrounded by a low square enclosure, partly sand covered. Especially on this low mound-shaped wall, but also on the ground, I found many potsherds of large, red vessels, the majority being plain. The profile of one of them is shown on Fig. 35:2. Besides the red ware there is also blue-grey, grey, and yellowish, all hard-burnt, recalling the ware known from Lou-lan. Some fragments are shown on Pl. 18:4, 5, 8, 9. Various iron fragments and two arrow-points were also found, both of the points being triangular with tang, Pl. 18:3. A Chinese copper coin without legend, Pl. 18:6, seems to be a degenerated Wu-ch'u, a late Han or post-Han issue. A rather large dark blue grinding stone (mealing-stone) must have been transported to this stoneless place from far away. On nearly all exposed clay surfaces between the sand dunes in the neighbourhood of the ruin I saw red pottery fragments, pieces of rusty iron and slag.

The situation of this watch station makes it highly probable that it served either as an out-look for the Merdek fort or as a station along a road following The Small River from Charkhliq or Miran up to Qum-darya and the Silk Road, the latter in all probability having followed the main river.

This watch-tower was the southernmost point from which I saw The Small River. Its winding, narrow course disappeared in a south-south-easterly direction, being surrounded by small lakes, swampy reeds and meadows with seemingly good grazing. About 20 li further down The Small River was said to form two lakes, a Baghrash-köl, and a Kök-toghraq, and after a distance of two days' travel on horseback the river should terminate. Nobody could give any definite information as to the position of the terminus of the river, but if the information obtained was correct, and I have no reason to doubt it, the river would reach very near to Qara-qoshun. When I asked my men if it reached Shirge-chapghan they answered 'Yes', but at other times it was stated to turn eastwards. NIAZ BAI, a Turk from Charkhliq, who had his summer abode with his sheep not far from the watch-tower, called The Small River Qum-darya, i. e. the same name as that of the mother river. Higher up I heard one mention the name Yangi-darya, but also this is applied to the main river. The dwindling course of one of its branches is seen on Pl. X b.

When STEIN, about New Year 1906—07, marched from Lou-lan in a south-westerly direction to reach the course from north to south of lower Tarim he came upon rows of dead trees, which very likely mark the course of my Small River at a more southerly point than that from which I saw it. I take the liberty of quoting some passages from STEIN (1921, p. 452):

"There (at camp 130) I came upon the first rows of dead Toghraks since Camp 127 — — — stretching in well-defined lines from north to south. — — — the wild poplars of the Tarim Basin show an invariable tendency to grow in lines parallel to the nearest open water-courses or the channels of subsoil drainage which continue them. Here the dead Toghraks, many of them of large size, all lay prostrate on the ground, and though their bleached and withered trunks and main branches still showed clearly recognizable features, I could see that they must have been dead far longer than those, for instance, which had grown up and died at the Niya Site since it was abandoned about the fourth century A. D. The position of this Toghrak grove, probably marking an ancient channel of the Tarim, was not more than sixteen miles in a straight line from the present bed of the Ilek branch."

LIST OF ANTIQUITIES FROM THE WATCH-TOWER

9:1. Handle of large earthenware jug with projecting rim. Brick-red ware intermixed with coarse-grained sand. Pl. 18:4.

9:2. Stout handle from earthenware vessel, blue-grey ware intermixed with coarse-grained sand.

9:3. Potsherd with a horizontal lug. Rather thin red ware, brown inside.

9:4. High neck of an earthenware vase of light-grey, hard-burnt ware. H. about 19 cm. Diam. of mouth 12 cm. Pl. 18:5.

9:5-6. Two potsherds from the rim of two vessels. Dark bluish-grey ware.

9:7. Potsherd from rim of large, bulky vessel of light-red ware intermixed with much sand. Fig. 35:2.

9:8. Three joined potsherds from a large vessel of rather thin, yellowish ware, red inside, and decorated with a coarse pattern incised with a double- or triple-pointed instrument. Pl. 18:8.

9:9. Potsherd, probably from the same vessel as —:8.

9:10. Potsherd from a largish vessel, decorated with a hatched border incised with a sharp instrument and surrounded by two rows of small impressions. The ware is yellowish on the outside and red on the inside. Pl. 18:9.

9:11-14. Four small potsherds of light-grey and blue-grey ware.

9:15. Small Chinese copper coin without legend, apparently a degenerated Wu-ch'u. Diam. 17 mm. Pl. 18:6.

9:16. Triangular iron arrow-head, very rusty. L. 63 mm.

9:17. Triangular iron arrow-head, more slender than —:16. L. 71 mm. Pl. 18:3.

H. BURIAL PLACE 7.

From the ruined watch-tower we turned northwards again. A march of 11 km., as the crow flies took us to the small cemetery No. 7 situated to the west of The Small River among sand dunes here and there interrupted by a few mounds with dead tamarisks. From here Burial place 5 lies 7.5 km. to the north-east, and Burial place 6 is situated only 1800 m. to the north-east. Cf. Fig. 18.

It contains the remains of three, probably four graves lying on and around a flat hillock with dead tamarisks.

Grave 7 A.

The best preserved grave was 7 A, though already in a much disturbed condition when we arrived. The coffin was made of half a hollowed-out trunk, Fig. 19. One end was closed but had an opening at the centre, which had been shut by means of a semicircular board placed inside the wall. The other end was open and ended in a blunt point; it had two deeply sawn grooves to receive the ends of a semicircular board. These two end-boards are seen at the lower part of Fig. 19. Two long boards had formed the lid, which had apparently been lined with thin felt. On top of the lid there had been a layer of brushwood held together by twisted ropes of

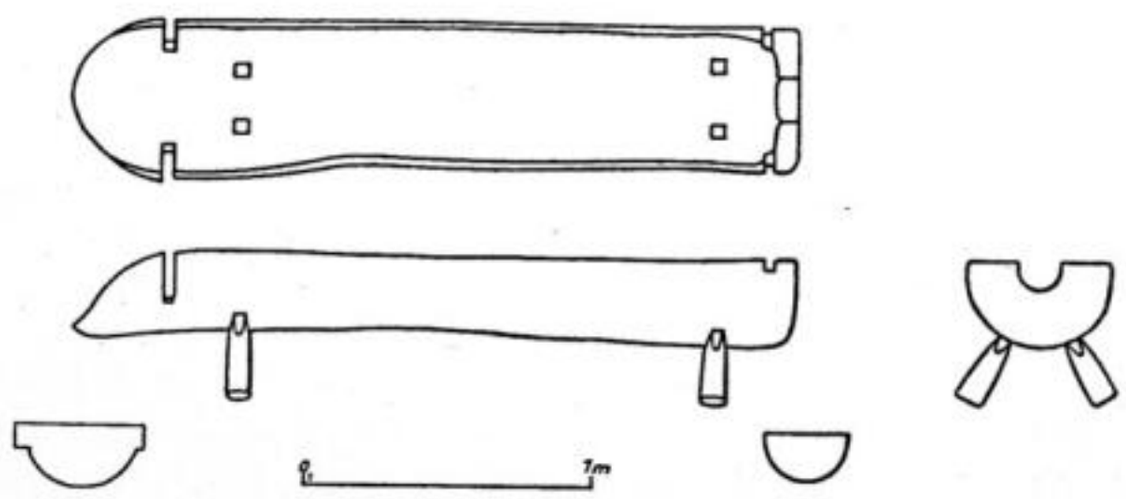


Fig. 19. Coffin of Grave 7 A.

the same material. Among this brushwood we found the skull of a sheep. In the bottom of the coffin four stout legs were inserted, giving it a curious appearance, but in this way the coffin was made to stand firm. The inside of it measured well 2 m. in length.

A pole nearly 2 m. long probably stood as a funeral mark or monument on the grave.

The corpse was now lying outside its proper resting place, Pl. XI a. This must be the work of plunderers, probably ÖRDEK. It was the most marvellously preserved mummy I ever saw in the Lop desert, and therefore did not seem to have been exposed very long to the destructive elements of the atmosphere. It was that of an elderly, stately gentleman with a small white beard, a thin moustache and white hair. The face was long and narrow with a very firm, broad, square chin, big, well-preserved teeth, and a high nose. The nostrils were shut with a pair of "stoppers" of wool wound with red silk, Pl. 25: 9—10. These were probably placed there to prevent effusion.[1]

The parched skin of the mummy was of uniform, yellow-brown colour resembling very dark sunburn, and preserved all over the body, Pl. XI b.

The feet were enclosed in low boots of red leather and of the same cut as those from Cemetery 5 and Grave 36.

Only some rags remained of the dress, a long gown of thin, undyed silk in plain weave, which had an edging of strawberry-coloured silk, 5—6 cm. wide. Since the dressing remains this silk stuff gives the impression of being some kind of gauze. There are some fragments of a belt made of the same material as the gown; on Pl. XI b it is seen knotted round the waist. The strip 7. A: 4 is of cotton material, i. e. probably of Indian origin. Tied on to it is a narrow strip of red silk, figured in batik with small lozenges. This technique is originally Indian. (Cf. Stein 1928, Ast. VI. 1.02).

The most interesting part of the dress is the collar, sewn together from seven pieces of four different kinds of polychrome silks with bold designs and wonderfully bright colours, Pl. 18: 1. I do not intend to anticipate Miss SYLWAN's treatment of this highly suggestive and important piece of textile work, which, for the discussion of the relation between East and West in the textile art is of outstanding significance. For the description I refer to the list below, written by Miss SYLWAN. From a study of the weaving technique she has discovered the remarkable circumstance that the patches *a* and *d* (Fig. 20) are of Western, but the pieces *e* and *f* of Chinese manufacture (*f* is a loose piece not marked on Fig. 20). Stylistically the

[1] The closing of all apertures of the corpse by inserting specially formed jade objects, a custom developed in China during the Han dynasty, jade being used on account of the belief in its ability to preserve flesh from decay and thus immortalize the body, may be a symbolic development of an originally hygienic procedure. This custom of closing the apertures with some kind of substance has been, and still is, practised among several peoples.

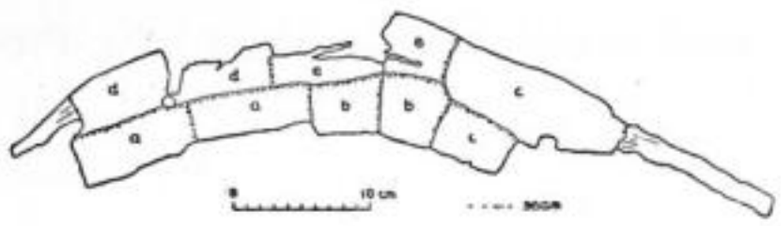


Fig. 20. Outline of the collar 7. A: 6.

winged quadruped dominating the bold pattern in piece *a* belongs to the monster world of the Near Eastern art sphere. From combining the three pieces of *a* the pattern has been slightly enlarged, but not sufficiently to show the complete pattern.

One of the Chinese pieces, *e*, carries a line of an interwoven character, *Ch'ang* (Glorious, Prosperous). The red pieces *c* and *d* are too worn to allow of a proper examination of the pattern.

This one collar is a strong manifestation of the mixed cultural relations prevailing in the Lou-lan kingdom, and so typical of its status. It is the first article composed of silk both from the East and from the West that has come to my knowledge.

In the third century A. D. a flourishing textile industry developed in Persia, the factories obtaining not only fabrics but also raw silk from China (Rebel, p. 55). Whether our Western silk pieces belong to this period or not remains an open question.

When examining the mummy I got a strong impression of standing face to face with a non-Chinese and non-Mongolian type, and as a matter of fact I was thinking the whole time of an Indian. I cannot be too positive on the last point, but the photo Pl. XI b certainly confirms my first observation.

Grave 7 B.

The coffin in grave 7 B on the eastern rim of the same hillock was half destroyed and covered with dune sand. Like the coffin 7 A just described the lid had also had a cover of brushwood. It contained a skeleton, the skull of which has been subjected to anthropometric examination by Professor GASTON BACKMAN to whose forthcoming report I must refer. The coffin was situated roughly NW-SE, the head being placed NW.

The nostrils were shut with "stoppers" wound with red silk, Pl. 25: 7—8, just as was the case in grave 7 A. Of the dress very little remained: fragments of white felt from the coat, edged with red-patterned silk (of Western origin, too worn to allow any description of the design), grey woollen material from the trousers, a cornet-shaped piece of dark-red silk found near the head, and some other fragments of silk fabrics.

Grave 7 C.

Immediately to the east of grave 7 A there was a dismembered coffin of the same construction as in Fig. 26, to be described presently. It was 2.25 m. long, the end boards measured 40×26 cm., and the corner posts were 50×14×13 cm. One of the

boards had been mended, two pieces being tied together with ropes. It was placed in S 70°W—N 70°E, and near it were lying a few human bones. Otherwise it did not yield any objects. A narrow pole, nearly 2 m. long, had probably been erected as a monument (cf. 7 A).

On the top of the hillock I saw the two shorter ends of a coffin of the same type as the one just mentioned (= Fig. 26), but I could not make out if they belonged to 7 B or to a fourth coffin.

Poles on top of mound.

At the top of the mound there were also some low poles, much worn by the weather, standing in an irregular circle, see plan Fig. 21. When digging in the sand filling this "enclosure" the neck of an earthenware pot came to light, Fig. 35:9. Probably these poles were erected as some sort of grave monuments as a very poor imitation of the imposing monuments on Cemetery 5. The irregular shape, and in fact the whole arrangement hardly favour the assumption that these remains are those of a hut.

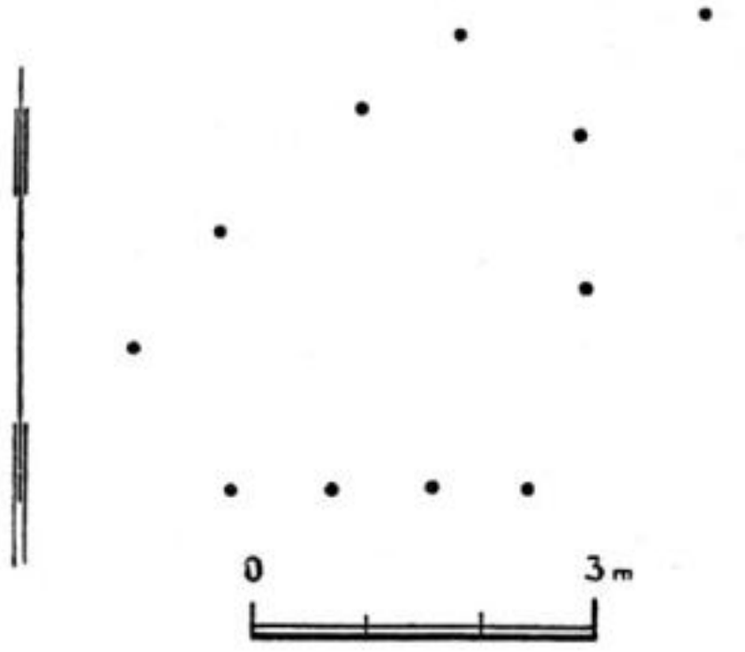


Fig. 21. Plan of erected posts at Burial place 7.

LIST OF ANTIQUITIES FROM BURIAL PLACE 7

Grave 7 A.

7. A: 1. Seven large fragm. from a gown of loosely woven silk, undyed, discoloured to brown, in plain weave, with remaining dressing (glue from silk worm?). One fairly large piece has fragm. from back and front with seam; a gusset is inserted in the lower part of the gown. Here is a patch of loosely woven silk in plain weave, undyed, slippery. It is uncertain whether the coat has been lined with this silk.

Strips of strawberry-coloured silk taffeta, 5—6 cm. wide, are sewn on to the edges of several fragm. of silk from the gown. One piece shows red silk strip with a pleat round the corner.

The seams of the gown are made of rather coarse, undyed (?) silk.

7. A: 2-3. Portions of waist-band, sewn together with the same undyed silks as in the gown.

7. A: 4. Strip of undyed, yellowish-white cotton fabric in plain weave, partly discoloured to brown. Cut somewhat on the bias right across width. In one half two shoots, each consisting of two blue cotton threads. Around the strip is tied another strip of red silk taffeta, figured in batik with small lozenges.

7. A: 5. Strip of same kind as —: 4 but not tied. L. 72.5 cm.

7. A: 6. Collar of the gown, sewn together of several pieces of silk of four or five patterns. At one end is a strip of the same silk as the undyed one from gown. At the other end a strip of undyed cotton fabric in plain weave, meant for tying. The collar has been folded. Silks *a* and *b* have probably been on the outside, cf. Fig. 20.

a) Figured weft-rib, figure warp 2-ply. Ground deep blue. Pattern red, beige, bluish green, white and blue from ground, incomplete horned quadruped with straight upright wings, lion's tail with check pattern and indistinct ornamental shapes. Western origin.

b) Figured weft-rib, 2-ply. Figure warp. Ground beige-yellow. Pattern red and white, indistinct.

c) Figured weft-rib, 2-ply, figure warp. Weft twisted or untwisted. Ground beige. Pattern red, indistinct.

d) Figured weft-rib, 2-ply, figure warp. Ground beige. Pattern red, indistinct. Western origin.

e) Patterned warp-rib, selvage. Ground grey; pattern red, bluish green, black, indistinct. One Chinese character interwoven.

f) Small separate strip. Figure warp-rib, selvage. Ground deep blue. Pattern white, red, bluish green. Chinese origin.
Pl. 18:1.

7. A:7-8. Two stoppers, which were inserted in the mummy's nostrils. Made of felt wound round with red silk. L. about 5 cm. Pl. 25:9—10.

Grave 7 B.

7. B:1. Fragments of white felt from coat, slightly rugged, edged with strip of figured silk, weft-rib, red and grey. Folded edging around corners. Shape and pattern indistinct.

7. B:2. Fragm. of greyish yellow woollen fabric in plain weave, from trousers.

7. B:3. Strip, composed of two pieces of red silk taffeta sewn together, with two strips of undyed silk taffeta attached.

7. B:4. Piece of undyed slippery silk, in plain weave, of a kind often used as lining. (Cf. 7. A:1).

7. B:5. Piece of dark-red, loosely woven silk in plain weave, sewn together in cornet shape. Was lying near corpse's head. H. 18.5 cm. W. about 10 cm.

7. B:6. Human hair, dark brown and grey, partly tied with red silk taffeta, sewn together with undyed silk taffeta, the latter wider towards the free end.

7. B:7-8. Two small stoppers from corpse's nostrils. Wound round with red silk in plain weave and undyed thread. L. about 3 cm. Pl. 25: 7—8.

7. B:9. String of hemp or grass, tied in a loop.

Find during excavation among poles erected on burial place 7.

7. C:1. Two joined potsherds from rim of small jug. Marked rim and short neck. Light reddish-yellow ware intermixed with finely grained sand. Diam. of mouth 12 cm. Fig. 35:9.

I. BURIAL PLACE 6.

This burial place is also situated on the western side of The Small River, only 1800 m. from Burial place No. 7, and 6 km. SW of No. 5. It is surrounded by sand and dry tamarisk mounds in a landscape of the utmost barrenness, Pl. XII a. I first came across this site on my way to Burial place 5 when I brought away some of the contents of Grave 6 A, but only after having completed the examination of the other graves in the region did I undertake the principal survey.

Grave 6 A.

The richest grave, 6 A, lies between 6 B and 6 C. The coffin was exposed in the sand, and was made of half a hollowed out poplar trunk, 2.1×0.65 m., with nearly oval end-boards and a lid of one or two long boards that had been covered with brushwood. On Pl. XII b a part of the emptied coffin is seen on the extreme left. The situation of the coffin was S 80°W—N 80°E, the head being placed in the eastern end.

The corpse was that of a woman, as seen from the dress and the accessories. The skull has been handed over to Prof. Backman for examination. Very little remained of the corpse save the skeleton.

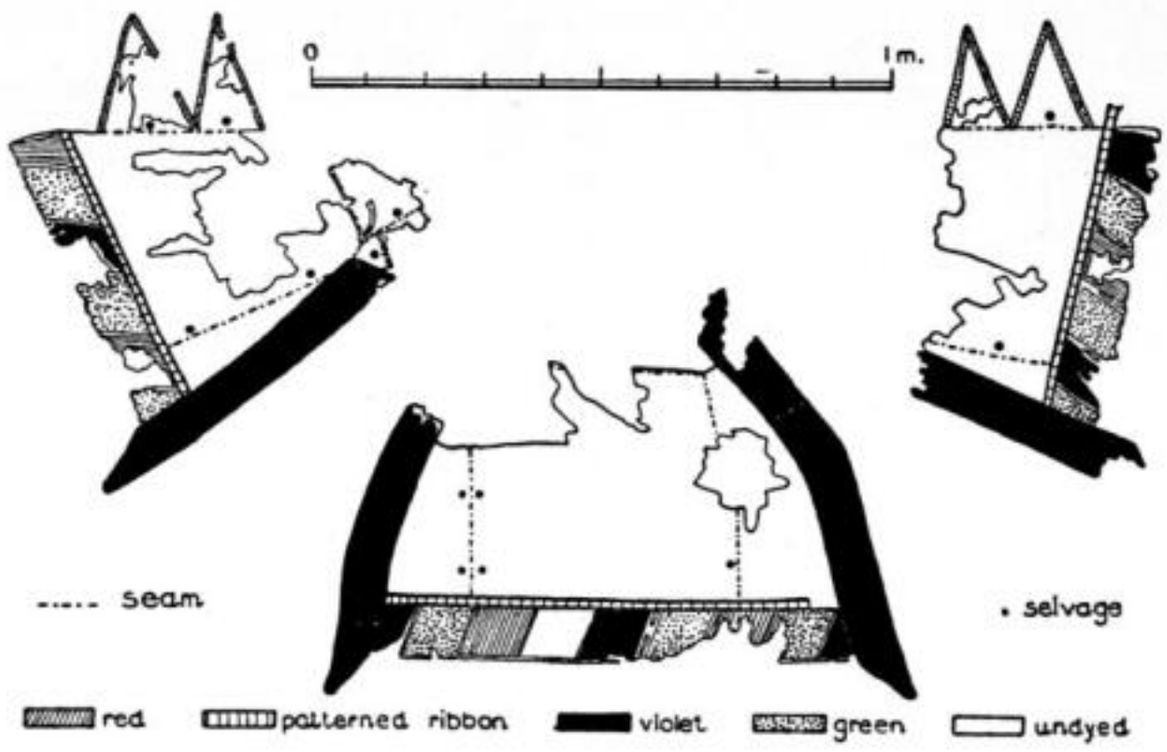


Fig. 22. The cape 6. A : 1.

She was most elegantly dressed in silk from top to toe. The most complicated and puzzling part of the garment is a sort of cape, now in three pieces, one back part and two front parts. These were apparently joined on the shoulders but open at the sides, and in front, Fig. 22. The front parts reached the wrists, and during the examination of the coffin I therefore believed the lower edges of the front parts of the cape to be sleeves. Both back and front parts have a broad border of lozenges of sewn-on silks in green, red, violet and brown colours. A ribbon in coarse warp-rib runs along the upper side of this border; on Pl. 16: 5 is seen a detail of its pattern. The ground-pattern of the ribbon is built up of checks with the same conformation as the five on a die. After every third of these "fives" follows a figure of varying shape. One of them reminds one of two combs opposed to each other, another is slightly reminiscent of the outline of a bronze ornament among the Ordos bronzes such as Arne 1933 Pl. VII: 10—12.

The front parts of the cape have each two pointed lappets, which apparently hung down on each side of the opening in front when the cape was worn open. These elements are quite strange, as one would expect them to be placed horizontally and not vertically. When the front parts of the cape were tied together the right part totally covered the left one. There is a ribbon on the left shoulder for fastening the cape, and when so worn the lappets of the left side were visible in the opening for the right arm.

The prune-coloured borders of the edges near the arms end in points, too, but less pronounced than in the case of the lappets.

The upper part (when worn) of this cape is much damaged as seen in Fig. 22, and the joining between the three parts is therefore somewhat hypothetical. As no traces of any head-gear were found it is not absolutely out of the question that the cape was large enough to cover the head too as some sort of hood. Even if we lack

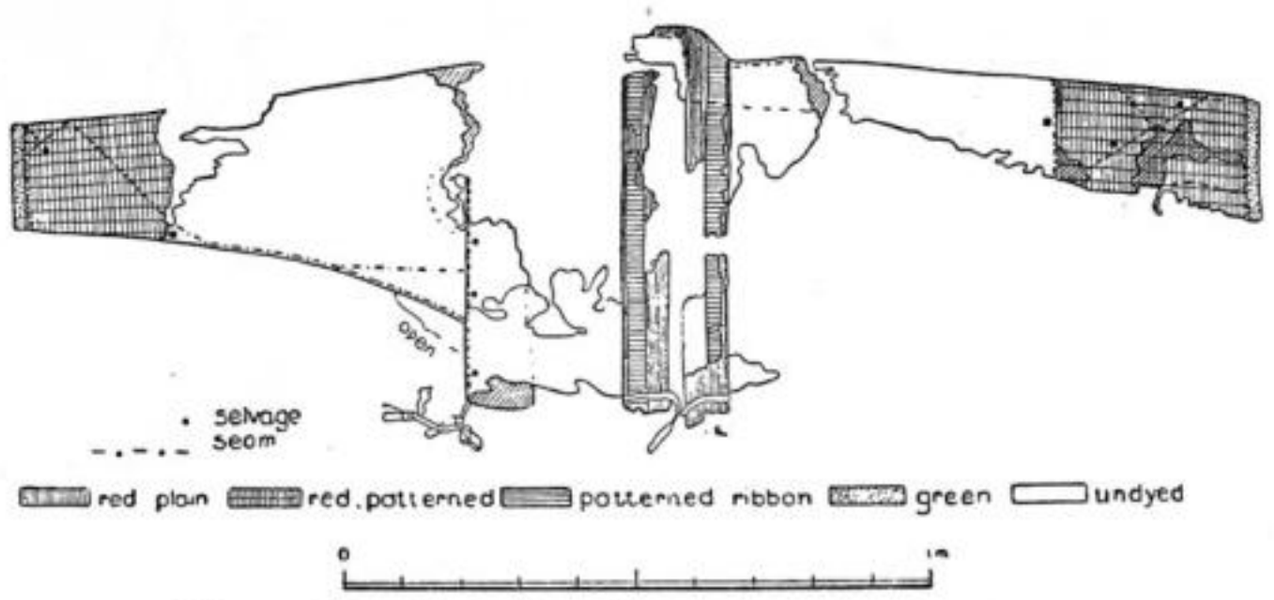


Fig. 23. The shirt 6. A : 2 (dotted lines = invisible edges).

exact parallels to such an arrangement certain Central Asiatic tribes of our day use women's head-dresses of very voluminous shape which may afford at least some points of general resemblance. But this conjecture is very uncertain.

Below the cape the buried lady wore a shirt with bodice of undyed silk taffeta with very long sleeves completely covering the hands, Fig. 23. The lower part of the sleeves is adorned with a thin red silk damask in plain weave and twill, with a pattern of rows of zig-zag lines attached to ribs between which are both diamonds and human figures of a highly geometrized shape, Pl. 16: 9, (this photograph was taken with translucent light). The pattern has a general likeness to Han dynasty tiles with simple geometric ornaments and with Han silks in general. Below this part the sleeves have an edging of plain green silk.

The ornamentation of the front part of the bodice consists of a red silk strip running round the neck and along the opening in front. This strip is followed by a silk ribbon in warp-rib weave, 4 cm. wide, with three similar parallel borders in different shades of buff, each having a lion in a field with reversed colours. The outer border of this ribbon shows distinctly, because the colours are here red and white, Pl. 16: 1. The shape of the lions is not very naturalistic and not so well executed as those on the lion border on a shoe among STEIN's finds (Stein 1928, Pl. XLII, L. H. 04). The right part of the front apparently overlapped the left part, as the latter has a shorter "lion-ribbon" than the former.

In a loose ribbon at the right hip were tied a pair of iron scissors, or more correctly shears as it is made in one piece, Pl. 16: 2. The description of a pair of scissors found in the Astana cemetery nearly corresponds to ours (Stein 1928, p. 685, Ast. i. 8.05). A pair of T'ang silver shears in the Asiatic Collections in Berlin also shows the same construction with the limbs crossed over from side to side forming a loop (Kümmel, Pl. 95); another T'ang specimen is depicted in Katori Pl. 94: 5. This figure-of-eight shape is unknown on European shears; their handles or springs are always open. Our Lop-nor specimen does not correspond absolutely with the T'ang shears referred to and is not necessarily of the same age as these.

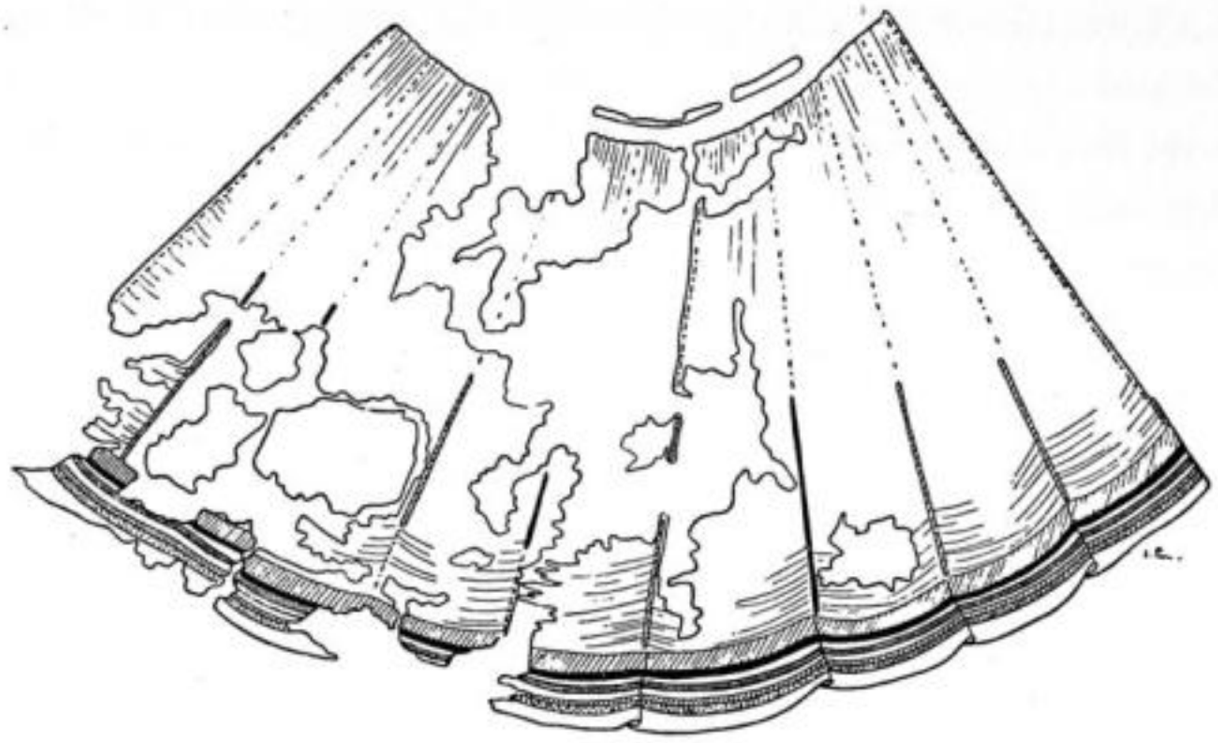


Fig. 24. The skirt 6. A : 3, spread out.

The skirt reached the ankles, being approximately 1 m. long, and was originally quite wide, consisting of at least nine panels. Before being placed in the grave it was cut open, and in Fig. 24 is seen a drawing of the unfolded garment. The lower part has a border, 12—14 cm. wide, made up of horizontal strips of green, red, brown and violet silks. Above this border there is a zone of elegantly arranged frills between vertical *passe-poils*. When worn, the outline of the skirt must have had something in common with those cornet-shaped skirts widening downwards which are depicted on the Han clay statuettes (for instance Sirén, Vol. 2 Pl. 76) and the painted tomb tiles from Lo-yang in the Boston Museum of Fine Arts.

The legs of the trousers measure also about 1 m. in length. They are made with wide legs which are gathered and close-fitting round the ankles, Fig. 25. The trousers on a small terra-cotta figurine from Khotan seem to be of the same style (Montell 1935, Pl. IX : 7).

There are also fragments from the sleeves of an under-garment, but the rest of it consists of undefinable fragments. The same kind of undyed plain weave silk is used in all the wearing apparels.

So far, this is the only more or less complete lady's dress from the time of Loulan not only in Eastern Turkistan but in

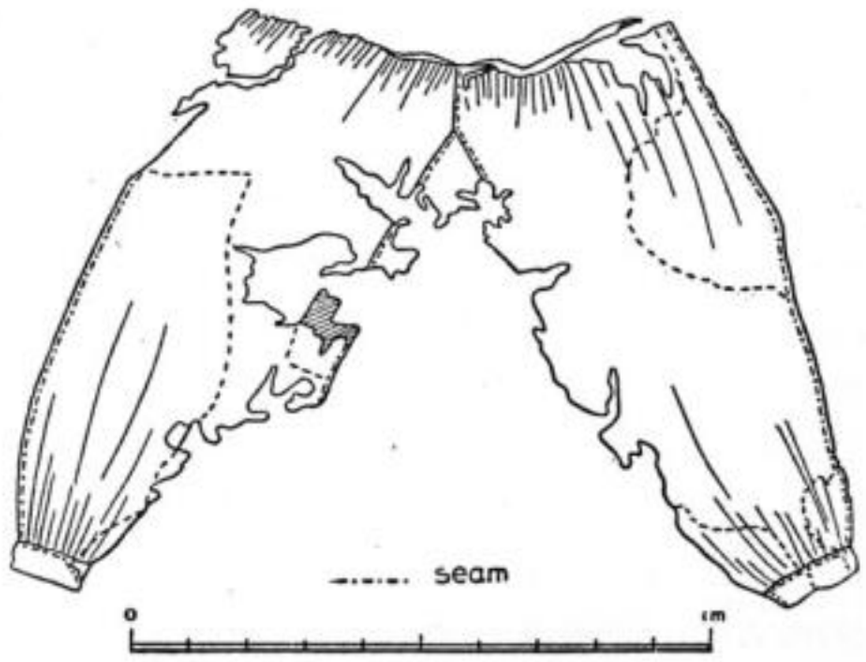


Fig. 25. Silk trousers 6. A : 4.

the whole of China. It is therefore scarcely surprising that it remains quite unique as to style and cut.

Miss SYLWAN has reconstructed the whole garment, and without the aid of her deep knowledge and understanding of textile matters I should never have been able to clear up the different fragmentary elements of this puzzling dress and combine them to form something like a complete garment. What has come out of it is therefore totally due to Miss SYLWAN's untiring labour. She has tentatively characterized it as of non-Chinese style though the fabric it is sewn of is of Chinese origin.

None of the plentiful Chinese grave sculptures of clay or the larger stone sculptures show any dresses cut to the same model as ours, and a search for an Indian parallel is equally unsuccessful. Some general resemblances are of course to be found, both with Chinese and Indian-influenced and Iranian specimens. Let us hope that Miss SYLWAN will be able to determine the homeland of this type of dress in her coming investigation of the silk materials from Lop-nor and Edsen-gol, collected by me during SVEN HEDIN's expeditions.

A round pouch or small bag of undyed silk taffeta, Pl. 16:4, was carried at the right side of the waist. The loose bands seen on the plate, besides serving as an attachment, were also decorative, as they are tied in artful knots. The red ribbon encircling the pouch had gold ornaments glued on to it.

Near the waist the rusty iron mirror Pl. 16:6 was found, with its cover of red silk bordered by a beige-coloured ribbon with a pattern of squares, and once carrying a row of small attached gold spots.

This technique of glueing small pieces of hammered gold on to soft material is, according to Miss SYLWAN, probably Chinese.

A small embossed bronze plate, Pl. 17:3, certainly adorned the garment too. STEIN found identical gilded plates near Lou-lan (Stein 1928, Pl. XXVI, L. C. 020).

The wooden spindle-whorl still sticking on its peg, which has a small perforation near the upper end, also belongs to the outfit of this lady, Pl. 16:8.

Round the neck she wore a simple necklace of strings with a few small white beads of stone or shell, and some of gilt glass in the front. Unfortunately this necklace was lost in the transit from the cemetery to the camp and could not be recovered. From Cemetery 5, however, we have a somewhat similar one (5. K:2). The white beads were of the type shown on Pl. 15:15 and the glass beads of an oblong shape. The latter are no doubt of Western origin. Similar ones have been found in the Lou-lan station.

Among the remains of the garment was found the doll's dress Pl. 17:1, 2, 4, 5, consisting of a coat, two shirts and a pair of shorts. There was, however, no doll. In spite of this it is highly probable that the doll's garment was placed in the grave as an expression of the same belief that caused the felt doll to be placed in Grave 10 and the rag doll in Grave 36 (cf. pp. 56 and 137).

The silk bag Pl. 16:7, found near the shears, is of Chinese make, as are all the textiles in this grave. The colours are now pale, on a brown ground the elegant floral design is executed in blue and light green(?). The outlines are very delicate, and the pattern covers the whole surface. A line of a Chinese character runs through the flower scrolls along the length of the bag; it is hard to discern with certainty but it is probably meant to be a *nien* (year) cf. Stein's L. C. II. 03.

Grave 6 B.

Only 3 m. to the north of Grave 6 A, and parallel to it, lies Grave 6 B. The coffin was dismembered but could easily be rebuilt, Pl. XII b. The construction of this type is the most elaborate among those used in the Lop-nor region. As seen from the drawing Fig. 26 it is built of four square corner posts in which the broad boards forming the sides and the ends are inserted with tenons, which have been kept steady by two dowels through each one. The board forming the bottom rests on a special cross-bar between the corner posts. The ideal reconstruction Fig. 27 is to show how the different members were joined. The lid is made of two long boards joined to each other with small dowels. No marks could be seen showing, how the lid was fixed to the coffin. The big heap of brushwood on the right side in Pl. XII b was no doubt placed on top of the lid, and the whole thing was probably tied to the coffin with ropes.

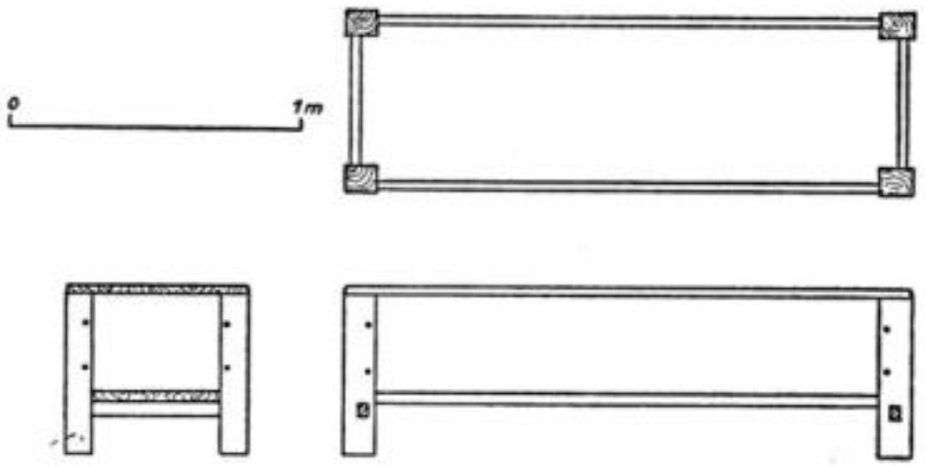


Fig. 26. Coffin 6 B. From above, one extremity and one side. In the top picture the lid is removed.

The corner posts form real legs reaching 19 cm. below the bottom, thus giving the coffin the appearance of a bedstead. For comparison with the size of the identical, though less well-preserved, coffin from Burial place 7 (p. 104)I give the measurements here. Length of side boards 173 cm., size of end boards 44×34 cm., size of corner posts 55×11×9 cm.

On Burial place 4 I saw some small fragments of this type of coffin, and Stein found it in at least one of this cemeteries (L. H. Stein 1928, Fig. 169).

The coffin was lined with white felt, partly sticking to the boards. Of the skeleton only fragments remained, beside parts of the dress of the corpse: fragments of a silk coat and trousers, and a coat of cotton fabric. The latter may possibly have been the lining of the silk coat. The piece of a coarse mantle woven in four-leafed twill of hair, and having broad browns stripes, Pl. 27: 11, was probably some kind of matting or blanket. Both technique and material are different from those of the mantles from Cemetery 5.

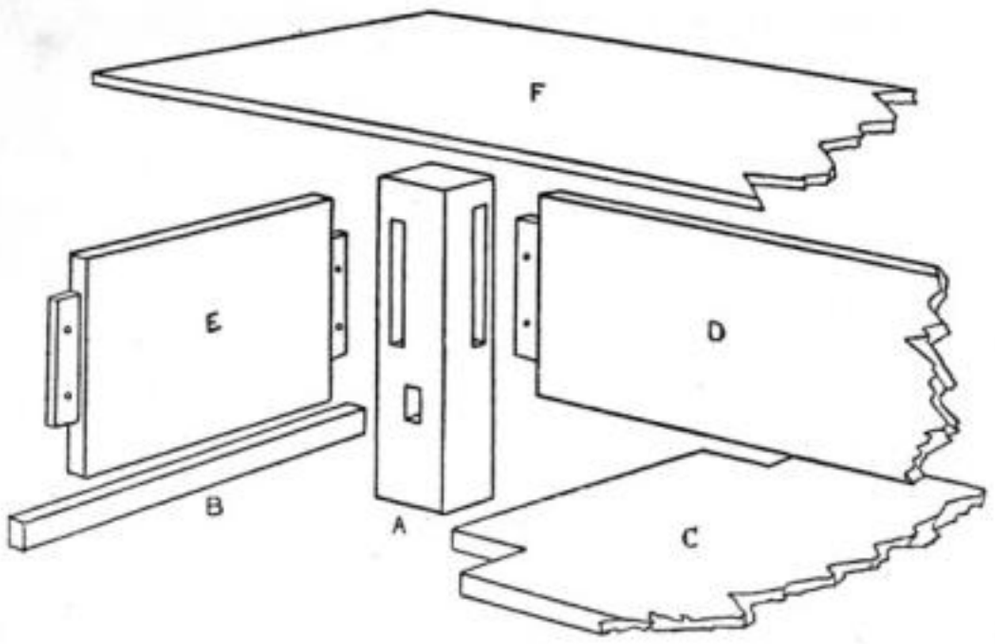


Fig. 27. Ideal corner construction of a coffin of the type Fig. 26. A) corner post, B) support of bottom, C) bottom, D) side board, E) end-board, F) lid.

Two silk ribbons were also found, one of which probably with the same lion pattern as Pl. 16: 1 though now indistinct, the other with a red and white chess-board pattern, Pl. 18: 2, both woven in warp-rib.

A trifling piece of patterned polychrome silk, No. 6. B: 7, has an interwoven Chinese character.

The fragmentary embossed bronze plate Pl. 15: 1 was, certainly, originally affixed to some soft material, probably the garment.

A bone handle with a remaining part of an iron knife, Pl. 16: 3, and a wooden arrow-shaft, Pl. 18: 11, were also found inside the coffin, the latter indicating the male sex of the corpse. From the size of the coat one infers that he was rather heavily built. The arrow-shaft has a marked notch for the bow-string, and in the front end the tang of an iron arrow-point is still sticking.

A small bundle of dark brown hair might be an offering, as in many other Lop-nor graves (cf. Grave 36, etc.).

Grave 6 C.

10 m. SSW of coffin 6 A there was a third coffin, situated in S 70° W—N 70° E, a half hollowed-out trunk that was split and worn by weather. It measured 2.15 m. in length. As in the other two coffins the head was lying in the eastern end, and the coffin was lined with felt. Only parts of the skeleton and of the garment remained. The latter in certain features reminds one of the dress in Grave 6 A, for instance a lower edge of a skirt (?) with nearly the same arrangement of different-coloured stripes as the big skirt Fig. 24, and in addition, vertical pleats after the same model as that represented on a most beautiful tomb statuette of immediate post-Han date in the EUMORFOPOULOS collection (Sirén 1930, Pl. 111). It had some small traces of beaten gold on it, which had apparently been glued on to the silk. The painted spots on the garment of the clay statuette referred to above are possibly meant to represent such applied ornaments of metal.

A sleeve, 6. C: 4, is 40—45 cm. wide.

Besides the textile fragments no funeral deposit was discovered.

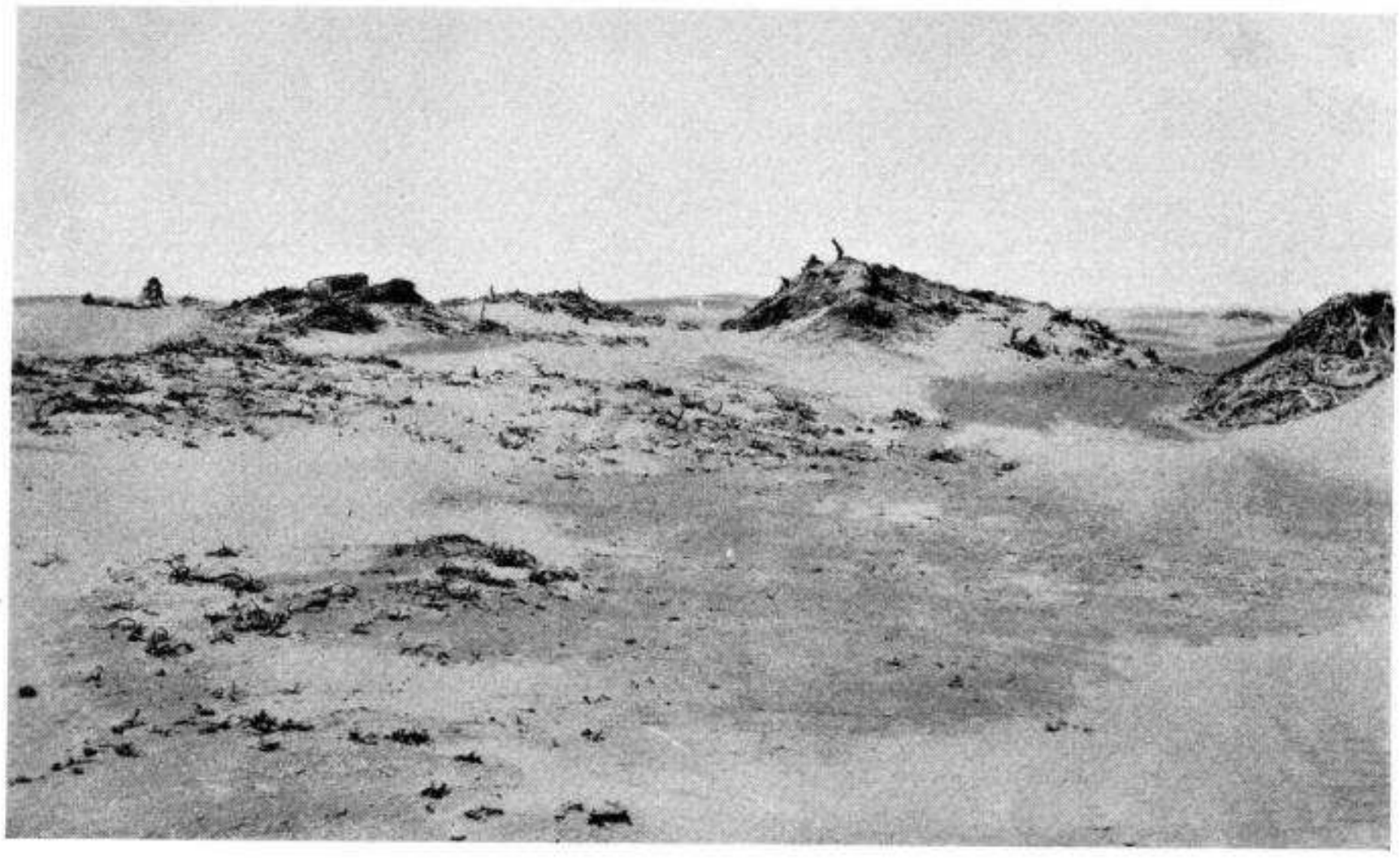
*



a. Grave 7 A.



b. The mummy in Grave 7 A.



a. The surroundings of Burial place 6.



b. The coffin 6 B. The brushwood to the right has been placed on top of the lid. To the left the opened coffin 6 A.

A fourth grave 5 m. NE of 6 B had been totally destroyed by the action of weather, except some pieces of human bones lying at the side of a bunch of brushwood.

*

All the three coffins were almost completely exposed, and it could not be ascertained whether they had been buried in pits in the ground or covered by some superstructures. It is not likely that the coffin type Fig. 26 was dug down in the ground , it more probably stood in some kind of hut. STEIN found some evidence of such burials (Stein 1928, L. H.).

Enclosure near grave 6 B.

About 20 m. to the north of Grave 6 B there were traces of a rectangular enclosure, 6 × 7.5 m., lying in the same direction as the coffins. The "walls" were marked by pieces of logs about 0.6 m. in length and lying in a row as if they had fallen down.

Digging inside this enclosure we came across four more or less fragmentary wooden cups of a roughly semi-globular shape and with a ring handle. They are coarsely made and of the same type as Pl. 19: 5—6, though smaller. At that time I was of the opinion that I was dealing with a small dwelling, but it may as well have been a grave where everything interred save the cups had been destroyed.

LIST OF ANTIQUITIES FROM BURIAL PLACE 6

Grave 6 A.

6. A: 1. Cape of silk, fragmentary. Three pieces preserved: back and two front parts. Final shape somewhat unsure. The plain part of the cape is of undyed taffeta. On both lateral edges of the back and on the edges of the front part towards the back there are broad bands of prune-coloured taffeta, forming points downwards. At the lower edge of the back a broad straight lozenge border of taffeta in various colours. From left: bluish-green, deep red, green, prune, natural, yellowish-red (discoloured), green and brown. The lozenges are separated by a narrow edging of brown rep. The border is edged at the bottom with similar brown rep. Between the lozenge border and the undyed silk of the cape there runs a band in coarse warp-rib weave. This band has red edges and in the middle is a buff and faded green pattern, consisting of repeated fields of checks alternating with ornamental figures of various shapes, one in each interspace (detail Pl. 16: 5).

The front parts of the cape terminate at the bottom in a border of the same kind as the back. The finish towards the front of the border of both parts is frayed, indefinite. The woven silk band on the left side runs 5 cm. outside the border, on the other side both band and border are cut off. Towards each side of the front, corresponding to the prune-coloured bands, are two hanging pointed lappets, each edged on the one side with green, on the other side with red taffeta. Cf. Fig. 22.

In the back part the full width of the fabric is about 47 cm.

6. A: 2. Shirt of silk, consisting of back, two front pieces and long sleeves. Bodice of undyed, yellowish taffeta, ornamented with red taffeta and woven red and white borders. The upper part of the sleeves is of the same undyed silk as in the bodice, the lower part being of red

damask. At the wrist a band of plain rep in pistachio green. The garment has a waist band fastened at the side seams. Large parts are missing, but reconstruction is possible, Fig. 23.

The ornamentation of the front pieces continues round the neck towards the front, with red silk strip, about 4 cm. wide, and a silk ribbon in warp-rib weave, 4 cm. wide, with three similar parallel borders of different colours, each with a stylized lion in a field in reversed colours, Pl. 16:1. The pattern of the outer border, alternating in red and white, quite distinct, the others are indefinite. This band is missing on the left lower front piece, the right one having been laid over the left.

The red silk, forming the lower part of the sleeves, is of damask in plain weave and twill, biased and composed of several pieces. The pattern consists of rows of zig-zag lines of various kinds attached to ribs, between which are partly diamonds, partly human shapes. Pl. 16:9.

At the lower part of the bodice is a waistband, sewn on with undyed silk, to hold the dress together. In the right-hand seam are similarly applied ribbons of the same silk as in the bodice, with loops in one of which the pair of scissors —:12 was suspended.

All the seams are turned towards the back or inside. Fig. 23.

6. A:3. Skirt of silk, undyed and resembling taffeta, composed of biased panels, one of which is much broader than the others and gathered at the bottom, with a border in various colours. At one side the skirt was cut between two panels before burial. Nine panels are now distinguishable, although some remnants suggest the possibility of even more. Of these nine, three are well preserved. Five panels form one part, four another. The top of the skirt had been gathered; the waistband is missing. The panels are sewn together with plain seams as far as to about 22 cm. from the bottom of the skirt, then tightly gathered about 10 cm. Then comes the border hanging like a frill. The panel seams are covered from the bottom up to as far as about half the height with edgings of coloured silk of plain weave. From the right: red, red, red, prune, red, prune, red, prune, red; the last seam is without edgings, the first width being only a small piece.

The border is made separately and lined with the same undyed silk as in the skirt, and sewn on to its lower edge. It is composed of double strips of silk taffeta turned downwards and sewn together successively at the lower edge with silk of the same colour as the strip. The colours of the strips from the bottom upwards, and with distinguishable measurements: undyed silk 37 mm., green (partly discoloured), red, undyed, dun fawn and prune, each about 8 mm., with red strip about 45 mm. on top. Fig. 24.

6. A:3 a. Fragm. of waistband (?) sewn together, of undyed silk.

6. A:4. Silk trousers, undyed taffeta, full width of fabric 47 cm. Two widths are used for each leg; the seams at the sides. The front part is missing. In the hind part a piece from the fork is preserved. At the top is a double edge in which is inserted a folded silk strip, 6 cm wide, for fastening the trousers round the waist. Trousers gathered at ankles and edged with double silk strip. Seams sewn with undyed silk. Fig. 25.

6. A:5 a-b. Two sleeves, fragmentary, from undergarment, of undyed silk taffeta, sewn with the full width of the fabric, about 47 cm. Cut in rounded shape. The seams turned in, sewn with undyed silk.

6. A:6. Piece of undyed silk taffeta, full width of fabric 46.5 cm.

6. A:7 a-b. Ribbon and strips of undyed, plain silk weave.

6. A:8 a-c. Silk ribbons, folded, plain weave.

6. A:9 a-b. Several fragm. of undyed, brown and red silk taffeta of various qualities.

6. A:9 c. Several fragm. of undyed, loosely woven cotton fabric in plain weave, partly white, partly discoloured to brown.

6. A:10. Pouch of rather coarse silk taffeta, undyed, yellowish. Sewn out of one straight piece gathered at both ends. At one of these ends are two ribbons, with knots, loops and ends running through the gathering; two ribbons are sewn on at each side of pouch opening, with the ends torn off. The ribbons are sewn with the edges folded in and then turned. Round the middle of the pouch is sewn a folded strip of red taffeta with remains of imprints of hammered gold. Reddish brown untwined silk has been used. The pouch is lined with undyed, loosely woven silk in plain weave, poor quality. Diam. about 7.5 cm. Pl. 16:4.

6. A:11. Bag of figured silk, warp-rib. Ground prune-coloured. The pattern is composed of fine light-green floral scrolls. This colour is also used for outlining buds and flowers of blue. One Chinese character woven in. Very frayed, the silk discoloured. Small remnants of lining of undyed (?) taffeta at one edge. 15.7×8.3 cm. Pl. 16:7.

6. A: 12. Iron shears. The limbs cross each other just above the blades, the spring thus forming a loop. Rusted. Point of one blade missing. The cutting edges have been 3.5 cm. long. L. 9.6 cm. Pl. 16: 2.

6. A: 13. Iron mirror, circular with central knob on back. Very rusty. Diam. 8.5 cm. Pl. 16: 6.

6. A: 14. Roundel of red taffeta covering back of mirror —: 13. Lined and edged with buff damask in plain weave and twill, figured in checks. Along the edge of the damask and next to the red silk are remains of hammered gold plate and marks of paste, showing that the gold lay like small roundels along the edge. Between the red silk and the damask a layer of thin, white felt. The edging sewn on with red silk. Diam. about 8 cm. Pl. 16: 6 (before removal from mirror).

6. A: 15. Small embossed bronze plate, circular with two perforations at the edge for fastening to a garment or suchlike. Diam. 13 mm. Pl. 17: 3.

6. A: 16. Wooden spindle whorl on a peg, 26 cm. long, with a small suspension hole at the upper end. The whorl is nearly hemispherical. Diam. 3.9 cm. Pl. 16: 8.

6. A: 17. Doll's shirt of undyed taffeta with shaped bodice. No seams at the shoulders, a cut opening and a slit for the neck, also for the sleeves. The seams turned in, sewn with fine silk of the same colour as the garment. Marks of stitches along all open edges. L. 12.5 cm. Pl. 17: 4.

6. A: 18. Doll's jacket of same silk as —: 17, with shaped bodice. The lower part missing. Sleeves of kimono shape, sewn on without hem at the wrists. One sleeve torn off. All seams turned in, sewn with fine untwined silk in the garment's colour. L. of compl. sleeve 4.7 cm. Pl. 17: 1.

6. A: 19. Doll's trousers of undyed silk rep somewhat coarser than —: 17—18. Each leg made of folded piece with selvage at the bottom, and the seams turned in towards the middle and the fork. Sewn with silk. L. of legs about 5.5 cm. Pl. 17: 2.

6. A: 20. Doll's coat of same silk as shirt and jacket. The front open; the upper part is of kimono shape with sleeves sewn on. The left sleeve missing. The lower part, sewn on around the waist, has inserted gores, slightly broadened towards the bottom. Round the neck a strip of red silk rep, 1.2 cm. wide, is sewn on. At the lower part of the coat, from the bodice to the bottom edge, folded strips of yellowish-brown taffeta, about 1.8 cm. wide, are sewn on. L. of coat with collar, along the middle of the back 14.5 cm. W. of shoulders 10.5 cm. Pl. 17: 5.

Grave 6 B.

6. B: 1. Back of a man's coat of silk taffeta, discoloured to brown, probably undyed, partly fragmentary. Shaped around the waist and with two gores in the side seam under the right sleeve. A portion of the sleeve remaining. The upper part has an open slit on the right side edged with brown silk taffeta. On the left side a small fragm. of brown silk. Fastened to the neck is a fragm. of the collar, consisting of a strip of undyed taffeta, edged with a narrower strip of brown silk.

6. B: 2. Back of a coat of cotton fabric in plain weave, partly fragmentary. The shape is rather similar to —: 1. Brown remnants of silk taffeta at neck, slit and lower edge. Gore at right arm. Slit indistinct. The fabric partly in good condition, white.

6. B: 3. Portion of trousers of undyed silk taffeta. Two pieces with a seam in the middle, and part of the fork sewn on to them.

6. B: 4. Several remnants of undyed silk taffeta.

6. B: 5. Silk ribbon, figured warp-rib, divided lengthwise into three; the middle part has had a red and white pattern, probably the same lion-pattern as on the ribbon on the shirt 6. A: 2 (Cf. Pl. 16: 1). Preserved L. 32 cm. W. 3.4 cm.

6. B: 6. Silk ribbon, figured warp-rib, with checks in red and white. 11.5×2.3 cm. Pl. 18: 2.

6. B: 7. Two small pieces of figured silk, warp-rib in blue, buff and red (?) In the close, indefinable pattern a Chinese character. They have been sewn on to undyed silk.

6. B: 8. Fragm. of thick mantle or blanket of light brown and somewhat mixed brown coarse animal's hair of the same quality. Woven in 4-leafed twill over two and under two warps. Warp: invisible mixed brown yarn, th. 2 mm; about 40 threads to 10 cm. Weft: th. 2—3 mm; 70 threads to 10 cm. Selvage at one side, 1.5 cm. wide with five warp-threads over which the wefts are laid in loops.

Dark-brown stripes, 2.5—3.2 cm wide, arranged in pairs. The broader light space between the striped parts is 2.4—9.2 cm; the narrower light space within each part respectively 2.5 and 3.7 cm. Pl. 27: 11.

6. B: 9. Fragm. of embossed bronze plate: two petals of a rosette with raised border and a raised inner line, denoting a second layer of petals? Dress ornament. Pl. 15: 1.

6. B: 10. Fragm. of iron knife with bone handle, made of a rib. The handle 96×16 mm. Pl. 16: 3.

6. B: 11. Arrow of light wood, of nearly uniform thickness. Deep notch at the base to receive bow-string. The top splintered, containing the remains of the iron tang of the arrow-point. L. 56 cm. Pl. 18: 11.

6. B: 12. Oblong wooden object. At each end a broader and flatter part. Narrow and high in the middle. Much weathered. L. about 40 cm.

6. B: 13. Bunch of dark-brown human hair.

Grave 6 C.

6. C: 1. Lower edge of a skirt (?) similar to 6. A: 3, of undyed silk-rep with frill of silk taffeta, consisting of a part, 6 cm. wide, with vertical pleats. Below this are five strips, 8—9 mm. wide, of silks in the following colours: natural, prune, natural, brown and red. At the bottom a band of undyed silk taffeta, 5 cm. wide. Small remnants of hammered gold here and there on the garment.

6. C: 2. Fragm. of skirt lining (?) of coarse fabric in tabby weave, probably of hemp. At the top a folded edge gathered with rough thread of hemp or grass.

6. C: 3. Fragm. of silk taffeta, white, with marks of stains from red fabric. One selvage.

6. C: 4. Sleeve, very wide, of undyed silk taffeta with adjoining piece of the bodice. The sleeve is composed of several different pieces joined together, fragmentary. Full w. of fabric 46 cm.

6. C: 5-6. Two strips of red silk taffeta.

6. C: 7. Various remnants of undyed silk taffeta, partly with adjoining red silk.

6. C: 8. Small piece of cotton fabric in tabby weave.

6. C: 9. Small piece of woollen fabric in plain weave.

6. C: 10. Ribbon of brownish red silk taffeta.

6. C: 11. Three fragm. of brown silk taffeta.

Hut (?) near to the N of grave 6 B.

6. D: 1. Semicircular wooden cup or dipper with remains of a ring-shaped handle. Coarsely made out of one piece. The bottom somewhat flattened. Diam. about 8 cm. H. 5 cm.

6. D: 2-3. Two wooden cups of the same kind as —: 1 but more damaged. Diam. about 8 and 8.5 cm.

6. D: 4. One half of a wooden cup of the same kind as —: 1—3. Diam. about 9.5 cm. H. about 5 cm.

J. BURIAL PLACE 4.

On the western side of The Small River 8 km. WNW from Burial place 5 and 7 km. NNW of Burial place 6 there is a totally destroyed burial place that I have called No. 4 because it was really found previous to No. 5, though it is better mentioned here, after the smaller cemeteries 6 and 7.

Surrounded by tamarisk cones with dead vegetation were four or six destroyed coffins lying on the ground. The wood was much weathered and the boards had dried into curious rolls. Both hollowed-out trunks and the type Fig. 26 had been used as coffins. Only few traces of human bones were to be seen.

I collected some pieces of yellow silk and a coarser fabric, and some dark-brown human hair.

To judge from the type of the coffins this burial place was of the same kind as No. 6 and 7.

LIST OF ANTIQUITIES FROM BURIAL PLACE 4

4:1. Bunch of coarse black-brown human hair.

4:2. Several very frayed fragm. of fine red woollen fabric in tabby weave.

4:3. Pieces of silk, packed together, originally yellow. Blood-stained?

4:4. Two fragm. of cotton fabric, originally white, discoloured to fawn, each sewn together with a ribbon of silk, also discoloured. Both cotton and silk in plain weave. 16.7×10.6 and 7.2×1.9 cm.

4:5. Piece of silk, originally yellow, now reddish.

K. DISCUSSION ON THE MINOR CEMETERIES.

These three minor burial places along The Small River — where future explorations will certainly reveal still more — differ sharply from Cemetery 5.

There are several types of coffins, but none similar to those in No. 5. The minor places lack impressive wooden monuments, and the whole grave deposit, both shrouds and accessories, are distinctly unlike what was met with at No. 5. Very little is of local make, all the silk and cotton fabrics, for instance, being importations from China and India respectively. For some of the silks of which the collar 7. A:6 is composed we have to assume a Bactrian or Iranian origin.

It is not impossible that at least some of those buried in this way were real Indians. But whether Indians or not, they were no doubt of a social standing far above that of the autochthons buried in Cemetery 5. This distinction in social status does not exclude a chronological difference.

Like much else of the Lop-nor material the dating of these graves is attended with considerable difficulty. The close resemblance to some of STEIN's Chinese graves nearer to the Lou-lan station makes it highly probable that the same chronological limits are valid, i. e. approx. 100 B. C. and approx. 330 A. D.

The Small River with its narrow channel, which nevertheless furnished the whole water supply for those living in this part of the Lop desert, must be very sensitive to fluctuations in the water amount of its mother river, Qum-darya. It is not out of the question that The Small River dried up completely before Qum-darya became quite dry, and if so the region around The Small River became uninhabitable earlier than approx. 330 A. D.

The map Fig. 18 gives an idea of the general situation of the burial places in the region of The Small River. None of them is placed immediately next to the river-bed but some distance away from it. Cemetery 5 lies isolated, which stresses its difference from the small cemeteries.

If the burial sites were thus placed some way off from the river the dwellings of the living must have been situated near the water. But of these no structural remains were found.

4. GRAVES IN THE DELTA OF QUM-DARYA.

In the introduction to the section dealing with the ancient remains along The Small River I have referred to the beginning of Dr. HEDIN's journey in native canoes from Könche along the Könche-darya. He continued along the whole course of the new river Qum-darya. The beginning of May 1934 saw him and his party in the jagged delta of Qum-darya, where he discovered and examined some ancient graves containing articles of considerable importance to the student of archaeology and ethnology. The outer setting and the events of these excavations are described in Dr. HEDIN's personal narrative "Den vandrande sjön" pp. 102—117, (German edition "Der wandernde See" pp. 90—103.).

A. MASS-GRAVE 1 (NO. 34).

On May 6th, 1934, SVEN HEDIN's men found a tomb on a mighty mesa or eroded ridge of clay in the middle of the delta near its northern edge. The mesa was 25 m. high, the tomb being situated 17.5 m. above water level. It was found to be a collective grave consisting of a rather shallow rectangular pit located NE—SW as were also the extension of the mesa, with roofing of wooden boards, and a couple of standing poles marking its edge.

Fifteen human skulls and some other human bones were lying in a jumble with rags of various fabrics, wooden objects of many kinds, and so forth. There were no complete skeletons or mummies. Judging from the number of skulls the extant bones were only about one fifth of what they ought to have been.

The pit did not contain any coffins. What HEDIN calls a much decayed canoe found in the pit is, however, probably the remains of a coffin.

Three of the skulls and the lower jaw of a fourth were brought away; they have been handed over to Prof. GASTON BACKMAN for examination, to whose forthcoming report I refer.

All the funeral deposit, save some badly decayed or fragmentary bowls, was taken away. Cf. Pl. XIII a.

Here follows a brief survey of the objects; for a more detailed description I refer to the list on pp. 128 et seq.

Vessels.

The two pottery jars Pl. 21:2—3 are of typical Han shape, and the light grey ware is also typical of the Han period. The higher one very much resembles a specimen from Charchan, Pl. 35:3.

The wooden vessels are in the majority. Of the cups or dippers shown in Pl. 19:4—6 there are seven pieces counting the fragments. They have a plain ring-handle.

The same type recurs among STEIN's finds (Stein 1928, Pl. XXIX, L. H. 01) as well as HUANG's from Lop-nor (Huang 1933, I, Fig. 28); our 6. D: 1—4 also belong to this group. The smaller specimens may have been used as drinking vessels, whereas the larger ones may have served as scoops or the like. Most of them show traces of having been in use for a considerable time.

The fragmentary beaker Pl. 19: 7 is of rather plain make, and is reminiscent of Stein 1928, Pl. XXVII, L. M. I. 035.

A cup-like vessel of squat shape and of more refined workmanship is shown in Pl. 21: 4; it is three-legged and painted in black, red and yellow. The edge is repaired in two places with small bronze rivets, now much corroded. The ring-shaped handle with a flat piece on top goes back to a Hellenistic-Iranian type which came into vogue in China especially during the T'ang dynasty. When placed in the tomb this vessel contained some kind of liquid (food?) of which there are still some dried-up remains.

A round shallow bowl Pl. 19: 8 shows traces of having been lacquered, its rim having possibly been covered with some other material, maybe silver. This vessel, too, has been repaired in ancient time, rather clumsily, with two iron plates.

There are also two fragments of another round lacquered vessel.

The small oval box Pl. 20: 6 is very fragmentary, but it has once been a nicely lacquered double-bottomed case for the preservation of a lady's toilet or fancy articles. One part is divided into three partitions. A symmetrical ornament of thin bronze has been fastened to the outside of the cover. STEIN had found two oval cases in the graves L. C. and L. H. (Stein 1928, Pl. XXIX) but they are larger and did not furnish any guidance for the reconstruction of the fragments described above. The only exact parallels known to me have been excavated from Chinese Han dynasty tombs in S. Manchuria and Korea, i. e. Nan-shan-li and Lo-lang,[1] (Shimada 1933, Pl. XXXII and Hamada 1934, Pl. LXII). These finds originate from the later Han dynasty, and the last mentioned tomb from the latter part of this period. The bronze ornament on our oval box, Fig. 28 c, does not correspond so closely to those on the similar boxes just mentioned and here reproduced as Fig. 29 b-c, as with the bronze fittings on a rectangular box and on the famous painted basket, Fig. 28 a-b. Our ornament is an intermediate type between those mentioned. When used on round or square articles this ornament takes the shape of a symmetric quatrefoil, as Fig. 29 a from WANG HSÜ's tomb at Lo-lang, and as such it often occurs as a central decoration on Han dynasty mirrors, on round lacquer vessels,

[1] Lo-lang or Lak-lang was a military colony in Korea founded by the Emperor Wu in 108 B. C. It remained the centre of Chinese authority throughout the Han dynasty. Japanese archaeologists have, with most praiseworthy care, excavated a number of the Chinese tombs at Lo-lang, and their labour has been rewarded with wonderful objects of art and handicraft. These have been published in a model way. The lacquered vessels found in the tombs here bear dates covering the period between 85 B. C. and 52 A. D.; these pieces were made in the western part of Szuch'üan not far from Chengtu. Lo-lang is another example of WU's active frontier policy as manifested in the north-east and a striking parallel to his activities in the north-west.

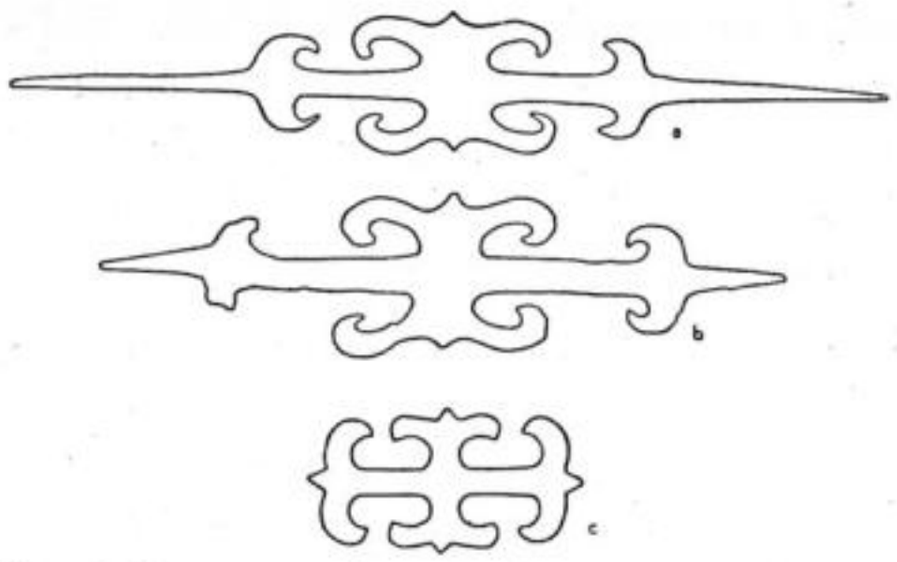


Fig. 28. Bronze mountings. a) from the painted basket, b) from Nan-shan-li, c) our No. 34:3. Size 1/3.

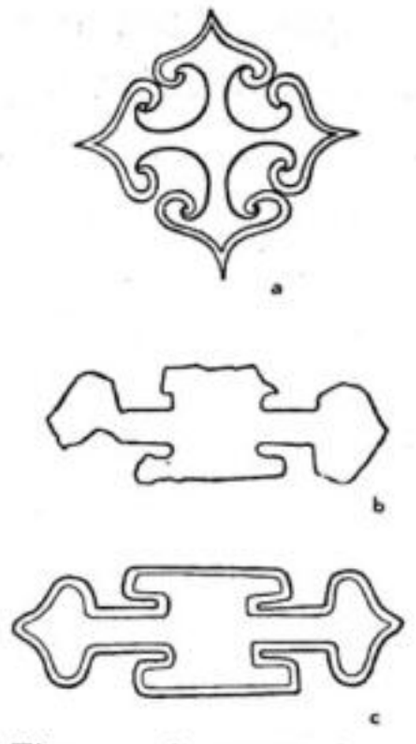


Fig. 29. a) rosette from a Lo-lang box. b) bronze mounting from a box from Nan-shan-li c) from the tomb with the painted basket. 2/3.

and so on. From the Noyan-ola tombs there are at least two specimens of quatrefoil ornaments, one of lacquered leather, the other of wood (Ausstell. chin. Kunst Berlin 1929, Nos. 1256—7)); they were probably some kind of attachments.

The lacquered articles from the Lop desert, as well as those found at Noyan-ola and in Korea, have been manufactured in China proper.

A coiled basket, Pl. 21:1, has also served as a receptacle, and is most likely of local make, though of quite another technique than that manifested in the finely woven grass baskets so common in the autochthon graves. It is interesting to note that none of the latter kind was found in the mass-grave.

Trays etc.

On the photo Pl. XIII a not less than six wooden trays of rectangular shape and with four short legs can be discerned. In the collection there are only three specimens, besides two loose legs from another two. Some of these objects got lost during the transport from the site to the main camp. Only the specimen shown in Pl. 19:3 has all the four legs preserved in place, but they are also better secured than the rest. On the bottom there is a carving at one end like a roughly shaped heart.

The legs on Pl. 19:2 are straight and plain, those on Pl. 19:1 are thinner in the middle, and Pl. 20:5, all that is left of another tray, is carved after a conventional lion-leg pattern with an originally Western (Iranian?) prototype.

This kind of wooden trays or miniature tables is quite a common outfit in Chinese tombs, especially of the Han dynasty and the period immediately following this. Thus STEIN found many of them around Lou-lan and at Ying-p'an, both rectangular, oval and circular.

In Korea, Japanese archaeologists have unearthed marvellously lacquered tables and trays of this type (Hamada, Pl. LXVIII—LXX; Oba and Kayamoto, Pl. XLII—XLIII). In the C. T. Loo collection there is another lacquered one, ascribed

to the Han dynasty. From South Manchuria we know of a clay tray with holes in the corners, apparently to receive short legs (Mori, Pl. XXXI), and in the same tomb the fresco paintings on a wall show a kneeling man in front of whom a cylindrical vessel with a ladle is standing on a low table or tray of the type in question, showing that they were used in the burial ceremonies among the Chinese. A sacrificial table of pottery depicted by LAUFER (1909, Pl. XXIV) also points in this direction.

A parallel from a region west of Lop-nor is furnished by a bronze table from near Verni (Alma-ata) along the road from there to Kulja in the Ili valley (Tallgren 1937 a, Fig. 3) "probably a case of a sacral object used for religious rites, as a stand or altar for holy vessels, idols or sacrifices". It is rather large, 1.25 × 1.12 m., and on the edge are standing thirty winged quadrupeds, probably lions, sculptured in the round. In the same paper TALLGREN also deals with stone sacrificial "vessels" or altars (Fig. 4—16) from the latter half of the last millenium B.C. from the region between the Ural mountains and the Volga, belonging to a Scytho-Sarmatian civilization, and all originating from graves. I do not believe that the Chinese wooden tables or trays must necessarily have been developed out of these stone altars; the comparison, however, is interesting.

As far as I am aware, the Chinese trays are mostly known from grave finds. That the Lop-nor specimens were used also by the living is evident from the many knife-cuts on both sides of them. I find it less likely that these knife-marks should originate from the cutting up of some sacrificed animal at the burial ceremony. STEIN also found a specimen in a ruin (Stein 1928, L.M.I.i.017). One of his wooden trays has originally been coated with some kind of polish; it is possible that some of the Lop-nor trays have been lacquered, as were those found in Korea.

The oval board Pl. 32:4 has possibly been suspended horizontally in leather strings, and if so the picture shows the lower side. The other side is much worn.

Bows.

Two bows were found in this mass-grave. The one shown in Pl. 32:1 is nearly complete, and made of a single branch of tamarisk wood, i. e. it is a self bow. The original length was about 112 cm. This first bow is of little interest when compared with the second one, a compound bow, which, unfortunately, is now in a very bad state of preservation, but nevertheless the most complete specimen from Chinese Turkistan.[1]

[1] From the Tibetan fortress of Mazar-tagh at Khotan-darya STEIN has three end-pieces of composite bows all of the same shape (Stein 1921, Pl. LI, and 1928, Pl. VI). During the Sino-Swedish Expedition the Chinese archaeologist HUANG WEN-PI found two pairs of bone-tips from a compound bow near Yar-khoto west of Turfan (Huang 1933, Vol. II, Pl. 2) their length being 20.1, 19.6, 19.8 and 19.1 cm. The unequal length may be due to their being in a fragmentary state. According to Mr. HUANG (who by the way regards them as weaving tools!) they date from the Former Han dynasty. This dating is based only on the construction of the tomb from where they originate. Any European archaeologist would prefer to place them somewhat later and regard them as Avarian.

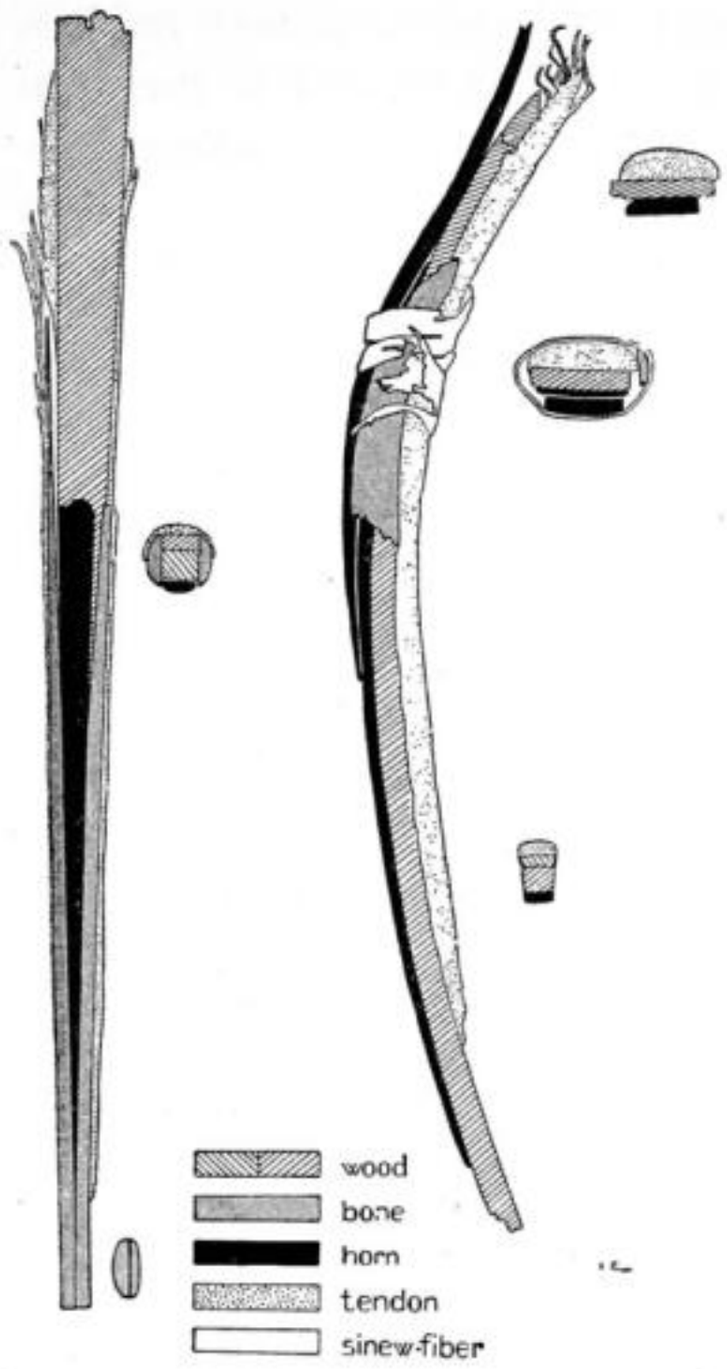


Fig. 30. The tips (A and B) of the compound bow No. 34: 26. Size 1/3.

When excavated, this bow was complete, and it is seen thus on the lower right-hand part of Pl. XIII a. During the transport from the site to the main camp some 140 km. higher up the Qumdarya it became dismembered on account of inadequate packing material, and several parts got lost. On different occasions subsequently these grave finds were unpacked and repacked, and each time the bow fragments were probably never taken due care of, as they looked rather poor and insignificant. Therefore only about one fourth of the bow remains. It is the more regrettable that it was so spoilt and broken before anybody could describe it, as its inner structure must have been very particular to allow of such a pronounced cupid's bow shape.

The best preserved part is one ear (A) Pl. 18: 10 and Fig. 30, with the members still adhering to each other. The core consists of two wooden slips, on the belly there is a wedge-shaped member of horn, each side is provided with a slightly curved bone reinforcement, and the neck has a cover of tendon that partly envelops the sides too. The outer ends of the bone-tips are cut square, the nock for the string is 2 cm. from the end, the total length is 25.5 cm., and the breadth 1.5 cm. On one side there is a furrow worn by the bow-string. The other ear (B) Fig. 30 has lost its pair of bone-tips, save the inner end of one of them. Judging from its position this tip must have been longer than those of A, about 32 cm. when complete. The horn member of A is 17.9 cm. long, whereas the one of B is 23 cm. The broader end of the latter is overlapped by a second horn lamina, the widest part of which is 2.1 cm. It therefore seems as if the ear A had been shorter than the ear B. Now such a feature is quite common with this type of compound bow. When not in use the string was loosened from the end with the shorter ear, i. e. the more pliable one, and fastened only when the bow was to be used.

On the lower Volga the bone reinforcements to bows found in graves were 30 and 24.5 cm. long and 1.5 cm. broad (Werner, pp. 38 et seq.); the longest met with was 34.5 cm. and originates from Carnuntum. This tallies very well with the reconstructed size of the corresponding elements of our bow. With such long bone-tips, making the ears quite rigid, the length of the complete bow must have been considerable. The approximate measurements that can be made on the photo Pl. XIII a

give between 1.4 and 1.5 m. in a straight line from end to end. The Yrzi bow is 1.47 m. along the curve (see below). The position of the bone remains of an Avarian bow in Grave 130 of Üllö, Hungaria, shows that its length has been 1.6 m. (Horváth, p. 21).

The broadest part of our bow must have been at least 4 cm.

When this type of bow has been found in graves only the bone parts have been, as a rule, preserved. Besides the two pairs of ear-pieces there are also bone elements from the grip or handle. From our bow there is one narrow curved bone strip that can hardly have formed part of an ear (it is wedge-shaped at one end, just as is the left one in the Fig. on p. 39 in Werner's paper), and a fragment of a 2.9 cm. broad lamella. The latter certainly comes from the curved grip (cf. Werner, Fig. on p. 37, and Marosi, Fettich, Pl. III: 5—6), as the grip must have been rigid to allow of such a marked cupid's bow shape as our bow undoubtedly possessed. Apparently it was "pre-shaped" to a great extent. Among the other fragments of wood and horn it is impossible to make any determinations as to their exact place in the bow. A horn lamella is 3.3 cm. broad and 0.4 cm. thick.

The reconstruction seen in Alföldi Fig. 2 comes very near the general outline of our bow.

The effective pull in this type of bow is limited to a rather short area.

The middle part of the Lop-nor bow recalls the shape of the so-called Scythian bow as we know it from various representations on reliefs, coins and so forth, but the ears are nearly straight whereas the ears of the Scythian type are strongly curved and apparently made mostly of horn, Fig. 31;[1] the difference in length must also be considerable. Unfortunately no actual specimen has come down to us. The Lop-nor bow is more closely related to the"Sassanian" type.

The general construction is that of the Yrzi bow from the Baghouz necropolis on the Euphrates (Brown, with full bibliography). This Yrzi bow is of about the same age as the Lop-nor bow, and one of the few Asiatic compound bows that has been carefully published. I want to take this opportunity of conveying to Dr. Frank E. Brown of the Yale University my thanks for his kindness in drawing my attention to some features of the Lop-nor bow that I might otherwise have overlooked.

The oldest extant compound bow was preserved in an Egyptian tomb of the fifteenth century B. C. (Litt. in Brown, footnote 5), but whether the origin of this contrivance is to be sought in Egypt is uncertain. More likely the evolution of the composite bow took place in Asia, and the homeland of such complicated forms as the Yrzi and the Lop-nor bows is to be looked for in Central Asia. No really old complete bows are known from Central Asia. Among the oldest fragments there is a yet unpublished bone tip excavated by myself in a Han dynasty fortress on the lower Edsen-gol river in Inner Mongolia.

[1] It is hard to get a clear impression of the Scytho-Sarmatian bow-ear of bone, from South Russia, reproduced in Ebert's Reallexikon, 13, Taf. 39 A.



Fig. 31. A Scythian stringing his bow. From an electron vase from Kul Oba.

Among the oracle bone inscriptions from Anyang there is a character denoting composite bow, apparently made of bone, wood and tendon. This is the oldest record of this bow type in China, but its origin is non-Chinese.[1] CHILDE believes that the Sumerian bow "was probably already of the variety known as composite; in any case some bows were bound with gold and the ends were tipped with carved pieces of copper to which the string was attached" (Childe 1928, p. 181). This Sumerian form seems to me be an artistic development of the composite bow of "natural" materials, the Central Asian form being more true to the original type.

These compound bows were highly effective in use, and also very valuable. It is said that it takes between five and ten years to manufacture a first-class compound bow in our days, and the procedure can hardly have been quicker in ancient times. Therefore, when such bows were deposited in the graves it must have been in order to pay special honour to archers of high distinction.

These powerful bows were the main weapon of the Huns and allied Inner Asiatic horse-nomads of the wide steppes. With them the Huns attained their fame as mounted archers, and we may be convinced that this fame was not due merely to a long and thorough training of the warriors but also to bows of the highest perfection. The Mongols carried the same bow, which is since known as the "Tartar" bow, when they conquered half of the Old World under CHINGGHIS KHAN and his successors; and it may still be seen in use at some princely court in Mongolia at archery competitions. Its use as a weapon came to an end only about the end of last century.

Various small articles.

Three wooden combs, two of which are depicted on Pl. 20: 3—4, are of the common Han type known from the Limes at Edsen-gol and Tun-huang as well as from different parts of Eastern Turkistan. Many have been found in Chinese tombs in Korea, and WHITE publishes several as coming from the old Lo-yang. They have a high rounded back and very fine teeth.

Two long hair-pins of black-lacquered bamboo, Pl. 20: 1—2, have adorned the high coiffure of a lady. The type is known from Han dynasty tombs in Korea. Bronze was also used for this type of hair-pins.

Other items of women's outfit from this grave are three wooden spindles, more or less fragmentary, Pl. 20: 7—8, and a loose spindle whorl of wood.

[1] The inscription can indeed be dated to the time of Wu Ting, 1324—1266 B.C. (Creel, p, 195).

A pair of leather shoes or slippers are 23—23.5 cm. long, Pl. 21:8. The inner sole has some light-brown hair left. The same footgear was also used by Chinese and Indian monks in the Turfan region during the T'ang dynasty, as seen on the fresco paintings, e. g. at Bezeklik, and it has remained in use among the Chinese until this day.

Textiles.

As the textile material is going to be the subject of a special volume in this Report series, in which Miss VIVI SYLWAN will give descriptions and publish the results of her thorough studies of the material both from a technical, historical and artistic point of view, I need only touch superficially on the very important silk fabrics found mixed up with all the other objects in this collective grave.

In STEIN's mass-graves the bodies, or what was left of them, were tightly wrapped with silk rags from old garments. HEDIN does not mention anything of this sort in his annotations concerning Mass-grave 1, only that everything was found lying heaped in no special order. It is quite clear that several of the rags have formed parts of garments, e. g. Nos. 34:40, 41, 46—48, 50. In Pl. 21:7 is seen a child's tunic of blue-green silk rep with a collar of undyed silk taffeta; the sleeves are short, and the lower part of the tunic is rather wide.

Most of the silk fabrics are plain. Pl. 25:2—3, however, show two patterned samples, both from garments, and having a common ground-pattern of rectangles with concave ends. Beside these rectangles the piece Pl. 25:3, which has formed the lower part of a sleeve, has a row of cash-figures. The lozenges are those typical of Chinese Han dynasty silk, and the whole pattern closely recalls that of some Chinese silks found at Palmyra, which are not later than the third century A. D. (Pfister, Figs. 8, 11—12).

Pl. 25:2 has also a lozenge pattern beside the rectangles, but this is very fragmentary.

One of the larger fragments of a garment is adorned with a narrow edging of a beautiful polychrome silk in warp-rib, Pl. 23:3, cut obliquely from the fabric that is woven after the same pattern as STEIN's L.C.07.a (Stein 1928, Pl. XXXIV). The colours are of the same shade as those on STEIN's piece though they are arranged a little differently. Two interwoven Chinese characters, *jen hsiu,* form a part of the sentence *Han Jen hsiu* etc. as treated by Prof. GILES in Appendix I to STEIN's "Innermost Asia", p. 1045. It is interesting to note that the two characters on one side of the pouch Pl. 23:1 are apparently identical with the two last ones in the sentence just referred to, and they correspond to Prof GILES' rendering, not to that proposed by M. AUROUSSEAU (cited in the same appendix of "Innermost Asia").

That we have to deal with a silk of the Han dynasty is beyond doubt. The shape

of the scrolls surrounding the different kinds of beast representations, all of a feline nature, point to later Han. To the stylistic parallels between these scrolls and those on Han tomb sculptures that ANDREWS has pointed out we may now add the fresco scrolls from a brick tomb of the later Han dynasty at Ying-ch'eng-tzu, South Manchuria (Mori & Naito, Pl. XXXVI a and XLIII). A close resemblance is also furnished by a tomb relief from Lü-tsun, south of Kia-hiang in Shantung, especially as regards the fierce-looking slender-bodied quadrupeds in a surgent movement competing with the waves of the scrolls (Laufer 1911, Pl. IX. The left-hand animal on this relief is executed in a position nearly identical with that of the third from the right on our textile, as seen on STEIN's complete specimen). It is rather a coincidence that this tomb sculpture comes from Shantung. We know that a part of the plain silk which China exported westwards was manufactured in Shantung, a province which still ranks among the foremost silk producing parts of China. It almost lies within the range of probability that the polychrome silk under consideration is a Shantung product too.

The whole composition with animal figures interwoven between flowing scroll bands is also known from lacquer work and inlaid bronzes of the Han period, the beautiful bronze tube in the C. T. Loo collection (Rostovtzeff 1927, Pl. II) forming the closest analogy.

On Pl. 22 are collected small silk bags or pouches with pleasant colours. Three of them are made of old embroideries executed in chain-stitch. Apparently they have formed part of ladies' outfits. One of them contained a diminutive leather bag with a white powder. A chemical analysis undertaken by Mr. HJ. LJUNGH has proved this powder to consist of white lead. This lucky find shows that the ladies even of this desolate Chinese outpost knew how to embellish their oriental features by the use of face powder. In WANG HSÜ's tomb at Lo-lang in Korea both a powder brush, pulverized talc and white powder were met with, the latter consisting of native carbonate of lead (Harada pp. 33 f). The chemical composition of the powder used in Lou-lan and Lo-lang is thus the same. This indicates that white lead was the material commonly used for face powder in China at the end of the Han dynasty. Already before any actual specimen had been found LAUFER has stated from literary evidence that making face powder of white lead is a thoroughly Chinese practice and not an importation from some tribe outside the frontiers as had previously been suggested. (Laufer 1919, p. 201).

The bags Pl. 22:4 and 5 are partly cut from embroideries with very similar pattern of S- and C-shaped figures, and they may also be compared with the square embroidery Pl. 22:3 from the single grave nearby. A part of the bag Pl. 22:5 is made from another embroidery with a larger pattern, and the bottom is of a third piece.

The largest bag, Pl. 22:1, is moss-green, also sewn together from several pieces taken from one embroidered damask patterned in warp-rib. The embroidered pat-

tern consists of different kinds of filled figures, nearly covering the whole surface, and recalling certain parts of the Noyan-ola embroideries, inter alia Trever Pl. 16 and 18:2.

STEIN also found two small silk bags in the mass-graves L. C.

There are also several ribbons, partly with knots, as for instance Pl. 21:6, and various silk pieces of uncertain use, Pl. 20:9.

Before leaving the silks we must turn our attention to a small strip of plain, undyed silk which would be of no special interest in this connection but for the ink inscriptions on it, Pl. 21:5. On one side there is a line of Kharoshthi characters which Prof. STEN KONOW, Oslo, has been kind enough to examine. He translates it as "The Sindhu teacher's roll, 40" for which I refer to Prof. KONOW's own paper that he has generously placed at my disposal and allowed me to print as an appendix at the end of this volume. His dating of the writing to the end of the second century A. D. is of special importance for the chronology of the whole grave.

On the other side of the same silk strip there are two Chinese characters, not very clear, which Prof. KARLGREN has kindly interpreted to me as *chin shih,* "fabric ten" either standing for 'Silk roll 10', 'Ten silk rolls' or 'Quality 10'.

These inscriptions in two languages, brief as they are, give us a hint of the general progress of the all important silk trade of this time. We know that the Chinese themselves did not take their silk as far as the Roman Orient, the Sogdians, Parthians etc. serving as intermediaries. These peoples were well aware of their favourable position in this respect, and anxiously guarded their trade monopoly, hardly letting any Chinese silk merchants pass through their own countries. That the Sogdians, on the other hand, had agents travelling far into the Chinese dominions is verified by such documents in Early Sogdian script as those found by STEIN in Lou-lan and as far to the east as the Tun-huang Limes near the ancient Yü-men-kuan. So far the Sogdians. They were perhaps never settled in any communities in the Tarim Basin. Indians, on the other hand, were so settled, and to such an extent that the Kharoshthi script was very widely spread there during the first two centuries of our era, this script being then superseded by the Brahmi.

It is not absolutely impossible that the roll of silk of which our inscribed piece formed an edge was handed over from a Chinese to an Indian just in Lou-lan. A Chinese, here or maybe further east in his home country, had marked it as his "Roll or Quality 10", the Indian then marking it with his own name, and the length of the roll. Probably this Indian sold it retail in Lou-lan, as a part of it came to rest in a Chinese tomb. Otherwise he may have forwarded the silk merchandise further westwards. It seems justified to conjecture that the unsettled conditions prevailing in China during the latest decades of the Han dynasty prevented the Chinese silk merchants from venturing upon too big enterprises, and that they did not proceed with their caravans beyond Lou-lan.

Some very worn fragments of a pile-carpet of patterned wool call for attention as their technique is non-Chinese. STEIN has some better preserved fragments with nearly the same design (Stein 1928, Pl. XLIV, L. C. ii. 09 a, b, and L. C. iii. 014). He regards them as products of an early carpet industry in the Tarim Basin.

*

In summing up the discussion of Mass-grave 1, we observe that most of the objects forming the sepulchral deposit can be labelled as Chinese. The silk fabrics are directly imported from China proper, and so, certainly, are the small objects of lacquered wood. The coarser wooden objects may as well have been manufactured locally, though mostly according to Chinese pattern. There are no goods common, however, with those of the autochthon Lou-lan people, as we found them represented for instance at Cemetery 5.

I am not going to enter into this question though I cannot but stress what others have said before: in the Chinese patterned silks from these Lou-lan graves we encounter the first traceable wave of expansion of Chinese art directed towards the Western world.

LIST OF ANTIQUITIES FROM MASS-GRAVE 1

34:1. Pottery jar with flat bottom, squat with narrow and short neck and well-defined rim. Upper part of body ribbed spirally. Light-grey ware. H. 14.2 cm., diam. of bottom 11 cm., of widest part 15.5 cm., of mouth 6 cm. Pl. 21:3.

34:2. Pottery jar of same ware as —:1 but of more slender shape. Upper part of body faintly ribbed spirally, and lower part scraped off vertically. H. 17.8 cm., diam. of bottom 6.8 cm., of widest part 12.2 cm., of mouth 5.7 cm. Pl. 21:2.

34:3. Symmetrical ornament of thin bronze. From a straight central part emerges a two-leafed volute at each end and from each side at the middle. Between the "leaves" a small point. One of these shows traces of having been gilt. The object has apparently been placed on top of the lid of 34:4. 71×38 mm. Pl. 20:6, Fig. 28 c.

34:4. Fragm. of a small oval wooden box, once lacquered. It was apparently a double-bottomed box with one part divided into three partitions by means of two transverse walls. The inside seems to have been lacquered red all over. The outside of the walls have been lacquered dark-brown with some narrow red lines. The lid is convex on the top (where the bronze ornament —:3 has been attached) and has a faint black border; the inside of the lid is concave; it is of inferior make compared with the rest of the box. One bottom is 99×43 mm., the other 102×47 mm., the lid 100×46 mm. Pl. 20:6.

34:5. Round shallow bowl of lacquered wood, probably elm. The outside has been brown-black, the inside red. Repaired with two iron plates. Has possibly had the rim covered with another material. Diam. 16.5—17 cm. Diam. of the low foot ring 11 cm. H. 4.5 cm. Pl. 19:8.

34:6. Two adjoining pieces from the rim of a round vessel of lacquered wood. The outside has been dark-brown, the inside red and the rim has probably been black on the inside. Diam. about 15 cm.

34:7. Large wooden cup, squat; cut, not turned, in one piece with a ring-handle flattened on top. Three low feet, from which flat parts stretch upwards along wall, terminating a little below the widest part of the body. Repaired with bronze rivets in two places. Painted black with a red border round the mouth, red inside. The feet are yellow. Contains a dried-up substance.

Diam. at widest part 19.4 cm., at mouth 13 cm. H. 13 cm. Pl. 21:4.

34:8. Wooden cup or dipper without foot. Cut, not turned, in one piece with a ring-handle flattened on top. Diam. 15—14.5 cm. H. 8 cm. Pl. 19:6.

34:9. Wooden cup of same type as —:8 but somewhat oval. The rim gnawed, probably by some rodent. Diam. 12.5—11.7 cm. H. 7 cm. Pl. 19:5.

34:10. Wooden cup of the same type as the preceding one, handle broken off. Somewhat oval shape. Probably made of elm. Widest diam. 16—14.5 cm., diam. of mouth 13—12 cm. H. 9 cm. Pl. 19:4.

34:11. Oval wooden cup of the same type as the preceding ones but with the handle missing. Split in old days and repaired with string. L. 14 cm. Br. 11.5 cm. H. 8 cm.

34:12. Fragm. of a fairly large wooden cup of the same type as the preceding ones. Widest diam. 16 cm. H. about 11 cm.

34:13. Ring-handle with flattened top from a largish wooden cup, possibly —:12.

34:14. About half of a small wooden cup of the same kind as the preceding ones; several pieces glued together. Widest diam. 10 cm. H. about 7 cm.

34:15-16. Two fragm. of the rim of a large wooden bowl with a roughly carved groove on the outside below the rim.

34:17. Wooden beaker, cut, not turned. The entire rim is broken away. Present H. 14.5 cm., diam. of flat bottom 6.5 cm. Pl. 19:7.

34:18. Small round basket with lid. Flat bottom, the wall is sloping inwards. The lid is made with a step between the edge and the flat top. Coiled with interlocking stitches on a single-rod foundation. H. with lid 13 cm., without lid 8 cm., diam. of bottom 15 cm. Pl. 21:1.

34:19. Rectangular wooden food-tray with four low, stout legs. The tray cut in the solid with a raised edge round the upper surface and two transverse raised ribs on the under-surface. Near the ends of these ribs are holes to receive the legs, the square tenons of which run through the tray. In the middle of one end the under-surface has a contour carving resembling a heart. Both sides used as cutting-board. 41×28 cm. H. 6—7 cm. H. of legs 4 cm. Pl. 19:3.

34:20. Rectangular wooden food-tray with four legs (two of which are now missing). The tray is cut in the solid with a raised edge round the upper surface. The legs, 10.5 cm. long, are thinner in the middle. They are affixed to the tray with tenons. 48×28 cm. Pl. 19:1.

34:21. Wooden food-tray of the same type as —:20 but with straight legs fastened with round tenons. Two legs missing. 32×20.5 cm. L. of legs 6.7 cm. Pl. 19:2.

34:22. Broken-off leg, probably from a tray of the same kind as the preceding ones. Slightly resembling an animal's leg. L. 7.5 cm.

34:23. Carved wooden leg of food-tray; conventional lion-leg pattern, oval tenon. Full length 12 cm. L. of tenon 2 cm. Pl. 20:5.

34:24. Nearly circular wooden board with a square groove on one side. From the edge two holes converge towards each corner of the groove, and through the holes leather strings have been run; they have also followed the groove. The board may possibly have been suspended by the strings horizontally. 13.2×11.3×1.5 cm. Pl. 32:4.

34:25. Wooden bow, probably of tamarisk. The middle part for the space of a hand's-breadth is left uncarved, but from there and towards the ends about half the thickness of the wood is carved away, giving these parts of the bow a nearly semicircular section. One end missing. The remaining end has a carved notch for attaching string. Present L. 92 cm. Original L. probably 112 cm. Br. 2.3 cm. Pl. 32:1.

34:26. Fragm. of a compound bow, which has been built up of wooden, bone and hornlamellæ and sinew. Twenty-one fragm. in all, but this is less than a third of the bow. One end complete. It consists of two curved bonelamellæ with a notch for the string 2 cm. from the end. On the inside a hornlamella is wedged between; the central part is occupied by two wooden members, and the outside is covered with sinew. The bonelamellæ are 25.5 cm. long and 1.5 cm. broad at end. The horn member is 18 cm. long. A loose hornlamella is 3.3 cm. wide. Fig. 30 and Pl. 18:10.

34:27-29. Three wooden combs with fine teeth and nearly semicircular back. 72×83×6 mm., 69×83×6 mm. and 50×65×4 mm. —:27 Pl. 20:3, —:29 Pl. 20:4.

34:30-31. Two long hair-pins of black-lacquered bamboo. L. 16 and 15.3 cm. Pl. 20:1—2.

34:32-34. Three wooden spindle whorls, each with a fragm. of the peg remaining in hole. The whorls are hemispherical or flat. Diam.

43, 28—24 and 33 mm. —: 32 Pl. 20: 8, —: 33 Pl. 20: 7.

34: 35. Wooden spindle whorl with hemispherical section. Diam. 38 mm. Th. 20 mm.

34: 36-37. Two small dried-up pouches or suchlike of leather.

34: 38. Pair of black leather shoes (shaped as slippers). The sole sewn on to the upper part with sandal-seam. No heels. There are light-brown hairs still remaining on the inside of the sole. L. 23.5 and 23 cm. W. 8 cm. Pl. 21: 8.

34: 39. Hair, probably human, dark-brown and reddish-brown.

34: 40. a) Large piece of reddish-brown silk rep, with an other piece of silk rep, reddish-yellow, undyed (?) and very fine, sewn on to it. At one end a piece of moss-green silk damask, now faded, with some rags of another piece of damask attached.

Ground of damask in plain weave with pattern in warp-rib. The pattern of former piece of damask consists partly of alternately repeated oblong diamonds, partly of zig-zag lines and standing lozenges in alternating rows. Pl. 25: 2. Selvage at one side. The pattern of the rags, which is very fragmentary, shows the lower part of a beast with three legs and some line ornaments, for the most part indistinct.

b-d) Three pieces from the same reddish-brown and yellow silk rep as in *a*.

34: 41. End of sleeve, hemmed, of reddish-brown silk rep, biased. Fragmentary. W. about 22.5 cm.

34: 42-43. Two ribbons of reddish-brown and brownish silk rep.

34: 44. Three sewn ribbons of silk, tied in a ring with long ends hanging down. The ribbons are folded and sewn with the edges turned in. One is of green taffeta, another of red, and a third of yellow undyed silk taffeta. The latter has a knot at one end. Pl. 21: 6.

34: 45. Rectangular piece of striped silk rep in green and brown, edged with reddish-brown strips of silk taffeta. At the centre are attached ribbons of green silk rep and bluish-green taffeta tied together. Sewn with light green silk. 43.5×12 cm. Pl. 20: 9.

34: 46. Portion of a large garment of partly faded silk taffeta with stripes of green, woven with undyed warp and alternately undyed and green weft. Attached is a strip of figured silk warp-rib, biased.

Ground reddish-brown, pattern blue, yellowish-brown and yellow. The pattern is identical with Stein 1928, Pl. XXXIV, L. C. 07a but incomplete. It consists of four-legged beasts, scrolls and two Chinese characters. The strip consists of two pieces sewn together; all from the same fabric. W. of strip about 2 cm. Pl. 23: 3.

34: 47. Fragm. of a sleeve; several pieces, sewn together, of green, partly faded silk damask rep with warp-rib pattern. Selvage. Repeated pattern of alternating rectangles with concave short sides. The points of the rectangles touch each other. This pattern is interrupted by a border outlined with zig-zag lines at each side and with a cash-pattern in the middle. Between the cash-row and zig-zag lines runs a border of lozenges, the obtuse-angled corners of which are surrounded by smaller lozenges and enclose five dots. On the next largest piece the border is different, possibly with fishes, but very fragmentary and indistinct. Pl. 25: 3.

34: 48. Large fragm. of blue silk rep with a strip of brownish red silk taffeta attached. Size of fragm. 33.5×24 cm. W. of strip 4.7 cm.

34: 49. Child's tunic of bluish-green silk rep, sewn in kimono shape with biased side seams and straight sleeves. The neck is cut straight with half of the upstanding collar of double undyed silk taffeta. The garment is probably torn off at bottom. Width of shoulder with sleeves 31 cm. W. at bottom 37 cm. H. 27 cm. Pl. 21: 7.

34: 50. Kerchief of yellowish white silk taffeta, darkened. The short sides hemmed. L. 57.5 cm. W. = full w. of fabric, about 46.5 cm.

34: 51-52. Two ribbons of bluish silk rep. 40×2.3 cm. and 35×0.9 cm. —: 51 full width of fabric 40 cm.

34: 53-64. Eighteen various fragm. of bluish green and undyed silk taffeta and rep.

34: 65. Strip of undyed silk rep with line of Kharoshthi writing at lower right-hand corner. Selvage. 26.5×3.5 cm. Cf. Prof. Konow's appendix at end of volume. Pl. 21: 5.

34: 66. Small pouch of moss-green embroidered silk damask. The lining, of yellowish silk rep, is longer than the embroidery and folded down as far as its upper edge. About 1 cm. from the opening of the pouch a silk thread is drawn through. A sewn ribbon of undyed silk taffeta holds the pouch together here; one ribbon end complete, the other torn off. At the top a

remnant of an attached ribbon of undyed silk taffeta. The embroidered part consists of several small pieces cut from bigger embroidered pieces and sewn together. The moss-green damask of the embroidery is woven in rep with a pattern in warp-rib. The embroidery is executed in chain stitch of silk in yellow, brown (red?), greenish blue, green and possibly other colours, now faded. The pattern consists of several kinds of figures. Inside the pouch were small carbonized lumps, probably from some fruit stone. H. about 7.5 cm. Pl. 22:1.

34:67. Small pouch made of different pieces sewn together. At the top, folded undyed silk taffeta with tying ribbon drawn through.

The centre is of red silk rep, embroidered with chain stitch in light blue, dark blue, green, brown and undyed silk. This part consists of three different pieces; two of them have probably been connected and show independent but incomplete shapes; the third has heart-shaped figures with reversed S's between bars, and opposed C's above the hearts. The lower part of the pouch is of green silk rep, embroidered with chain stitch in yellow, blue and brown. The indistinct pattern consists of lines and a leaf. No lining.

The tying ribbon of the pouch is made of pale green silk taffeta and held together by blue, sewn ribbon (fragm.).

On the opposite sides of the pouch two ribbons of green silk are attached to the embroidery.

Inside were some carbonized lumps, probably from fruit stones. H. about 6.5 cm. Pl. 22:5.

34:68. Middle part of small silk pouch. The same embroidered silk as in the central part of 34:67, with heart-shaped figures. At the top folded, at bottom gathered together with silk thread drawn through. Present H. about 4.3 cm. Pl. 22:4.

34:69. Small pouch made of several small pieces of silk in various colours sewn together. Very frayed. At the top undyed folded rep, in the middle red, at the bottom undyed and prune-coloured. Tied round with strips of light green and blue silk taffeta, partly faded. Lining of undyed rather coarse silk taffeta. The pouch is sewn together with green, brownish-red and undyed silk. H. about 9 cm. Pl. 22:2.

34:70. Contents of pouch —:69: a small leather bag containing powder of white lead; wrapped in wool-hairs.

34:71. Three attached fragm. of undyed cotton fabric in plain weave, discoloured to brown.

34:72. Fragm. of hemmed woollen rep, now brown.

34:73. Two pieces of rough woollen braid. W. 2 cm.

34:74. Fragm. of lightly fulled woollen felt, discoloured to yellow.

34:75. Fragm. of carpet or mantle, woven in three-leafed twill of coarse light and dark brown hair yarn. Warp mixed greyish brown, th. about 2.5 mm.; about 30 threads to 10 cm. Weft th. about 3—3.5 mm. in both cases about 30 threads to 10 cm. A stripe of brown weft at one edge of the fragm. shows that the rug has been patterned, probably striped.

34:76-79. Fragm. of patterned wool pile-carpet. Fragm. with selvage from both side borders preserved, although original W. of carpet is indeterminable. Pattern on the whole indistinct. Border, about 4 cm. wide, furthest out with transverse stripes in dark brown, light yellow and fairly bright red; within, towards the middle, 3.5 cm. wide border of latch hooks, dark-brown on light-brown ground. It is impossible to decide whether the border has been broader towards the middle. The pattern of the middle field is vague, occasional angles of lozenges and checks only just distinguishable. Colours diffuse, yellow, red, brown, brownish purple and in a few places green knots in roundels or single.

Ground fabric weft rep, alternately close and sparse. Warp brown wool; th. 2—2.5 mm. 54—58 threads to 10 cm., in the selvage about 20 threads to 5 cm. Weft th. about 2—2.5 mm., 5—7—11 shoots of weft = 8—12 mm. w. between knot rows, mostly greyish-yellow. At a part of 13.5 cm. pale red wefts, next to it, between three rows of knot, two threads in each shoot of greyish yellow weft, otherwise one thread in each shoot.

B. GRAVE 35.

(= Single grave a).

On the eastern side of the big mesa with the first mass-grave there is a minor mesa stretching NE—SW and measuring only 12.7 × 3.8 m. The top rises 9 m. above

water level. A standing tamarisk pole attracted the attention of Dr. HEDIN's men, and when they started to dig they found a rectangular pit in the very hard mesa clay. 0.7 m. from the surface they came upon the lid of a coffin lying NE—SW, with the head pointing NE. The whole coffin was raised to the ground where it was opened.

It consisted of half a hollowed-out trunk with the ends closed with semicircular boards; the lid was made of two boards. The length was 1.82 m. the width 0.52—0.45 m. The inner length was 1.71 m., the width 0.42 m., and the height 0.29 m. It is visible on Pl. XIII c. Dr. HEDIN is of the opinion that the coffin is a cut-off canoe.

When the lid was taken off a layer of felt was hiding the corpse, that of a young woman 1.6 m. in height, Pl. XIII b. On the head she wore a kerchief of silk-wadding wound like a turban. The dress consisted of outer and inner garments of silk and hemp. Only samples were taken of the different kinds of fabrics, and though Dr. HEDIN gives a description of how they were found it is not easy to get an impression of what the dress was like. Let us hope that Miss SYLWAN will be able to throw some light on this interesting question.

The patterned yellow silk damask Pl. 25: 1 formed the most attractive element of the dress. Its geometrical design with coupled lozenges is typically Chinese and is identical with Stein 1928, Pl. XLIII, L. C. vi. 01, and belongs to the same class of splendid Chinese silks as the following fabrics from Noyan-ola and Lo-lang: Trever Pl. 21: 2 and Harada Pl. CXXIV. It was cut in a triangular piece, one edge bordered with blue silk, and was probably from the lower part of a long garment. The blue silk had also been used for other parts of the dress.

On her feet she wore a pair of shoes with intricate designs, and of fine workmanship. When found, the shoe was coated with clay and looked much damaged. Thanks to the untiring efforts of Miss SYLWAN and her assistants at the RÖHSS Museum, Gothenburg, it has been successfully cleaned and mounted, and is now one of the most charming textile objects in our collection, Pl. 24. It is nearly complete, except for the sole, which was made of hemp(?), otherwise the material is silk. The toe part is best preserved, and to this part of the shoe the decoration is limited. The elaborate design comes out satisfactorily on the somewhat enlarged reproduction Pl. 24: 2. There is an upper crimson border with a row of dragons marching right and with the elegant, swift movement in every line so typical of the Han art. They are executed as quite naturalistic quadrupeds with a very long tail and a long crest from the neck.

Immediately below there are some small green indistinct figures, and then follows a pair of extremely stylized eyes extended backwards into red lines. Below these lines there is on each side a row of purple-coloured birds(?). The central horizontal band, crimson with green spots, is crowned by a row of swimming (?) birds, all moving left. Below the central band the pattern is in green colour, unfortunately damaged. There seems to be another row of birds swimming left, and below this

pairs of broad triangles arranged with the points towards each other, a design known from Huai style bronzes (Umehara 1936, Pl. LXXXIII). The lowest part is too damaged to allow of any analysis.

As seen from the above the design is arranged in horizontal rows, but there is also a kind of vertical central stripe.

STEIN has found a similar shoe in one of the Chinese graves L. H. (Stein 1928, Pl. XLII and LXXXVIII, L. H. 04) and another, with decorations all over in the ruin L. B. NW of the Lou-lan station (Stein 1921, Pl. XXXVII, L.B.IV.ii.0016). The main decorative elements recur on all three specimens. Especially the first mentioned of STEIN's shoes have birds, but flying, and dragons, or lions as STEIN calls them. And his may possibly be lions. Their tails are not so elongated as on ours, and there is no neck crest.

Miss SYLWAN is going to deal with the technical aspect and what it signifies. Stylistically the decoration is Chinese, and the material used in the upper is silk.

The beautiful little square embroidery Pl. 22:3 was found on the breast. It is cut out of a larger embroidery, and closely resembles the one used for the small bags Pl. 22:4—5 from Mass-grave 1. The silk is red, and the designs, which are slightly reminiscent of cicadas, are sewn in chain-stitch, blue, yellow-white and brown. A small pearl is attached in each of three corners, the fourth one is lost.

The silk pouch Pl. 23:1 with its beautifully preserved colours is one of the most attractive textile objects from the Lou-lan region. It is made of two different kinds of patterned warp-rib with interwoven Chinese characters. One of them is quite legible (*I* = harmony, union), the other two are not correctly woven, but most likely they are meant to represent *Wu Chi* (without end), i. e. characters identical with the two last ones in the sentence on STEIN's silk L.C.07 a for which I refer to GILES' appendix in Stein 1928, p. 1045. On the narrow strip of silk used in this pouch (Pl. 23:1 b) there are pairs of small birds (ducks?) facing each other, a floral design quite naturalistically executed, the end of a scroll, and an ornament with three rolled-in volutes and three slender prongs. The same pronged *motif* occurs as an element in the ornament on the broader piece of silk that forms the main part of the pouch, Pl. 23:1 a. This element is very common on the Noyan-ola embroideries (Kümmel Pl. 55—59), and on some of STEIN's figured silks from Lop-nor, especially from L. C. It occurs also on a piece of Chinese silk from Oglakty in the Minusinsk region (Tallgren 1937 b, Fig. 23). On the inlaid bronze tube in the C. T. Loo collection which ROSTOVTZEFF places in the early Han period we find a similar element, though less dissolved (Rostovtzeff Pl. III).

As there are green and blue colours which in print come out almost the same as the back, ground the otherwise satisfactory Pl. 23:1 does not reproduce the intricate and dissolved pattern quite correctly. In reality the elements of the ornament form an oval figure; several of these recur on one of STEIN's silks (Stein 1928, Pl.

XXXV, L. C. 03). The colours are well preserved and give an impression of refined beauty.

Outside the head end of the coffin the following articles were placed: the nicely turned wooden drinking cup, painted in red and black Pl. 27:6, a wooden food-tray on four low legs, the skeleton of a sheep, and some Ephedra twigs.

The small cup is of the same type as STEIN's Ying. III. 3. 07 from Ying-p'an (Stein 1928, Pl. CX), though more elegant. There are other features, too, recalling another of the Ying-p'an graves (Ying. III. 4) for instance the head-gear.

The food-tray is to be compared with those found in Mass-grave 1. It is made of two boards. On the bottom there is a carved mark, and both sides show traces of having been used as cutting boards.

Both the type of coffin and the rich silk garments of the deceased lady place this grave in the same class as Grave 6 A. Whether these two ladies belonged to the same race or not is, however, another question, but they had no doubt the same social standing.

As to the age of this grave we are hardly able to date it more precisely than within the known limits of the period of Chinese settlements in this region. Most likely this lady lived during one of the three first centuries of our era.

LIST OF ANTIQUITIES FROM GRAVE 35 (Single grave a)

35:1. Square piece of yellowish white silk felt. Was wound like a turban round the head of the corpse. About 50×60 cm.

35:2. Dress fragm. of yellow silk damask with inserted strip of bluish-green silk taffeta, 6 cm. wide, sewn on with undyed silk. Damask with ground in plain weave, pattern in twill with zig-zag lines with intervening double lozenges with angles outside two opposed corners. Fragm. somewhat biased, with marks from stitches on two sides. Patched. W. about 39 cm. H. along blue strip about 47 cm. Pl. 25:1.

35:3-5. Several fragm. of same material as —:2.

35:6. Fragm. probably from the lower part of the same garment as above, of undyed silk rep, cut somewhat on the bias like —:2. Selvage. Hem in two places. Lining of undyed, slippery silk, in plain weave, ragged and bigger than the outer fabric.

35:7. Fragm. of back of hemp (?) fabric with shoulder seam on to small front part. Belonging to this part a low, upstanding collar. A small piece of the same fabric attached to the lower edge. Greatest L. 74 cm.

35:8. Large ragged piece of undyed hemp (?) fabric in plain weave, full width about 43—44 cm. Worn. May have belonged to the same garment as —:7.

35:9. Portion of a garment of hemp (?) fabric in plain weave, two parts. The upper part consists of two pieces of blued fabric with brown gore in between; all fragmentary. The lower part attached to the upper part and consisting of larger piece of undyed hemp(?) fabric, partly with hem. Sewn with undyed silk or thread of some other yellow material.

35:10. Three fragm., two large and one small, of a garment of undyed hemp (?) fabric in plain weave, biased and forming a point. Hem at two sides. The two larger pieces have been joined together. The smaller piece has been torn away from the larger one. Hems of the same kind as —:9. Full width of the material about 47 cm.

35:11. Fragmentary panel of skirt or trousers of undyed hemp(?) fabric in plain weave. Gathered at the top and somewhat biased towards the upper part, seam with fragm. from the next panel attached. L. 90 cm.

35: 12-13. Two fragm. of the same fabric as —: 11.

35: 14. Two ribbons, made of biased hemp (?) fabric in plain weave, folded together with the edges turned in, and ribbon of thin undyed woollen fabric in plain weave, now yellow. Probably from a waist-band.

35: 15. Ribbon of folded silk taffeta, partly sewn together and tied in a loop. The two ends are torn off. Before washing the silk was very light in colour, now yellowish brown.

35: 16. Fragm. of ribbon, made of dark red silk taffeta, folded and with the seams turned in. At one end, with selvage, the edge is folded in and shows marks of stitches; weaved as a result of gathering. The other end frayed.

35: 17. Small square piece of red silk taffeta. Embroidery of chain-stitch in blue, yellowish white and moss-brown silk. The pattern consists of alternating rows of standing hearts, within which are bars on each side of an S; in the point a drop. Above the hearts a dot and two opposed C's, carrying an acute angle. The square is cut out from a larger embroidered piece. It is edged round with brown silk. No lining. In three corners small pearls threaded on silk and fastened with a knot. The fourth corner damaged. 8.5×8.5 cm. Pl. 22: 3.

35: 18. Pouch of silk warp-rib of two different patterns. It is made of a small straight piece, rounded at the bottom, and a larger and broader piece, gathered round the lower part of the former and sewn on along the edges of the narrow piece. A small extra piece is let in between the larger and the smaller pieces near the top.

The larger piece consists of two reversed pieces, the pattern thus being reversed as well. The ground brownish red, the pattern dark blue and yellow, of oval shape and composed of several kinds of small volutes, inter alia one element with three rolled-in volutes and three slender prongs. Pl. 23: 1a. Repetition of figures: in the warp direction straight succession; in the weft direction alternating rows. Two Chinese characters also form part of pattern.

The smaller piece has a dark blue ground and a pattern in red, yellow and light blue. Pattern incomplete; on one side a leaf, a flower on a long stem and the end of a scroll. On the other side two birds facing one another, part of a cloud scroll, three rolled-in volutes with three slender prongs, and a Chinese character. Pl. 23: 1 b.

The pouch is lined with undyed silk in plain weave. H. 17 cm.

35: 19. Shoe, woven in silk over the last, interlining and sole of hemp(?). Inner lining missing. The toe part well preserved, the side and heel parts partly dissolved, the warp gone, a very small piece of sole remaining. The weave of the outer part is rep-like, the texture of interlining and sole is braid-like, as in the former case the pair of threads are every time twisted in the same direction, in the latter case every other time in the opposite direction.

The side and heel part in buff colour; there may have been small green insertions at the sole fastening. The toe elaborately figured and distinctly narrowed from the sides. At the opening a buff edging is laid along the cord and sewn on to the interlining. This edge has probably run round the entire opening. The pattern of the toe part is striped downwards, towards the toe. Immediately below the upper edge is a border of buff dragons on a red ground. Below this are some small green indistinct figures with a central V. A pair of slit-like "eyes" extending backwards into a red line. Below these lines a row of birds (?) in purple, all on a buff ground. The central horizontal border, red with small light-green ovals, has a row of red birds on the top and a row of green ones below. The central vertical stripe is marked with a red triangle in the upper row of birds and a light green field in the main horizontal border. The lowest part of the toe is damaged, and the pattern somewhat indistinct. A horizontal row of broad green triangles arranged in pairs with the points meeting on a horizontal line. Below these the pattern is indistinguishable; it seems to have been finished with a red edge with a small buff diamond in the middle. Approx. L. 23 cm. Preserved L. greater than that of the original, while the weft has stretched owing to missing warps. Pl. 24: 1—2.

35: 20. Small fragm. of yellowish brown warp-rib with waved pattern in somewhat darker colour.

35: 21. Piece of yellowish white felt, which covered the corpse, either as a shroud or as a lining to the coffin.

35: 22. Small fragm. of coarse woollen fabric, dark brown and yellowish.

35: 23. Wooden cup, lathe-turned. The upper part painted red, the lower part black. On the moulding near the bottom, alternating black and red lines. H. 7 cm. Diam. of mouth 9.6 cm. Pl. 27: 6.

35:24. Rectangular wooden food-tray or low table with four short legs. Made of two boards joined with dowels. Raised border around the upper surface. On the under-surface a carved irregular mark of five lines. On both sides marks of wear and knife cuts. The legs, oval in section, fastened with rectang. tenons. L. of legs 6.6 cm. only two of them complete. Size of tray 45×29 cm.

35:25. Some bones from a sheep sacrificed whole outside the coffin.

35:26. Some Ephedra twigs, found outside the coffin.

C. GRAVE 36.

(= Single grave b).

On May 7th 1934 Dr. HEDIN and Mr. CHEN discovered a second single grave, situated on the eastern side of an imposing mesa rising 25.3 m. above the water level.[1]

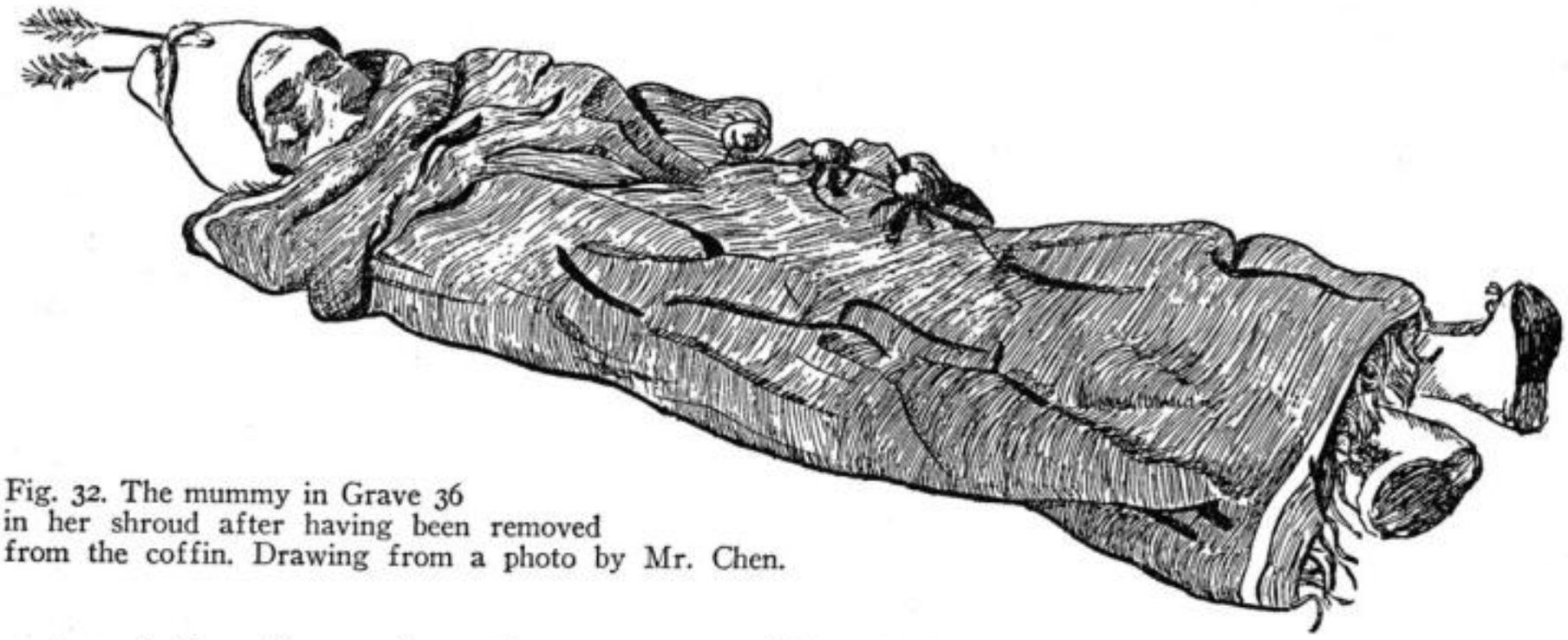


Fig. 32. The mummy in Grave 36 in her shroud after having been removed from the coffin. Drawing from a photo by Mr. Chen.

1 m. below the surface there was a coffin of the same type (half a hollowed-out trunk) as in Grave 35, but instead of a wooden lid it had a covering of ox-hides. Above the hides the small basket Pl. 26: 1 was found; its warp consists of rigid dicotyledonous stems, the weft is a mixture of grass and roots of an Artemisia. It is made after the same model as those from Cemetery 5, but the pattern is made in the shape of a net and not as zig-zag bands. This is the specimen examined by Mr. HJ. LJUNGH (Cf. appendix II). The handle is of brown wool, and the opening was covered with white felt.

The coffin was 1.7 m. long and 0.41—0.35 m. wide. The well preserved though much dried-up mummy was that of an old woman with long, grey hair parted in the middle. The body, which measured 1.52 m. in length, was enveloped in a finely woven dark-brown mantle of soft wool with a yellow and red border, Fig. 32. In three places along the right side it was tied up into small bags containing

[1] As Dr. HEDIN's maps of his canoe trip in the Qum-darya delta still await the final adjustments I am unable to give the position of the mesa more exactly. Its position on the map Fig. 37 is only approximate. It is situated some little distance to the east of the graves first discovered.

small Ephedra twigs. One of these is to be seen on the sample of the mantle that was taken from the site, Pl. 26: 4.

Round the waist she wore a thin loin-cloth of woollen fringes, red and undyed, of a certain youthful elegance, Pl. 26: 5. It recalls the specimen Pl. 12: 1.

The feet were stuck into a pair of raw-hide moccasins or shoes which were decorated with red cords and feathers on the toes, and of which the upper edge was dentated, Pl. 26: 6. The hair was turned inside save on the soles. The model is the same as that used in Cemetery 5 ("Ördek's necropolis"), and these also seem to be quite new and hardly used. They had an inner sole of lambskin.

The head-gear consisted of an inner cap of dark brown felt, Pl. 26: 2, and an exquisite outer cap of yellow felt, the top adorned with red cords, in the middle of which is fastened the split skin of an ermine with the head hanging down in front. On the left side there are two feathered pegs, wound with sinew fibres and red wool, rising boldly above the top of the pointed head-dress, Pl. 26: 3. Both caps are made with ear-flaps to be tied under the chin, apparently for winter use. Except for the adornments the outer cap is identical with the head-gear worn by the Scythian in Fig. 31, and a Sakian as seen on a relief at Persepolis (Le Coq 1925, Fig. 127).

Six wooden and one bone pin have apparently served to keep together the edges of the mantle. Three of them have the barrel-shaped heads decorated with small incised triangles once filled with red, Pl. 27: 7—8. Three others have plain heads, Pl. 27: 3. The one made of bone Pl. 27: 4 is smaller, having a spool-shaped head. These pins closely resemble those found by Stein (Stein 1928, Pl. XXIV, L. F. 05 a, etc.). They are carved of hard wood with several annular rows of triangular incisions, the triangles arranged a little differently from those so common on arrows and other objects from Cemetery 5.

A small comb has the round pegs of wood fastened in a transverse piece of tendon, Pl. 27: 10, just as is the case with combs from Cemetery 5.

Pl. 11: 2 depicts a small doll made of various kinds of wool rags steadied by a small wooden pin of the same form as those just described but with cylindrical head.

A small bundle of sinew-fibres and woollen yarn wrapped in a piece of red felt may possibly have served as some kind of charm or amulet (cf. the bundles of Ephedra twigs Nos. 5. D: 12—14).

Among the funeral deposit there is also a link of dark brown hair kept together by a lashing, apparently representing a hair offering. The practice of cutting off the hair and sacrificing it to the deceased is an old and widespread custom. According to Jordanes the Huns cut off their hair at the death of Attila (Rydh 1919, p. 241). That the Huns practised this custom in their home country around the beginning of our era is shown by the discovery of not less than fifty queues in tomb No. 6 at Noyan-ola. In one of the Oglakty graves near Minusinsk two plaits of

brown hair were found; their age cannot differ very much from that of the Lop-nor graves (Tallgren 1937 b, Fig. 4).

The dress of this old lady is identical with that of the young man in Grave 5 A of "Ördek's necropolis", but of altogether higher quality. The coffin, on the other hand, is to be compared with those from graves 35, 6 A, 6 C, and, in a way, with 7 A. Dr. Hedin opines that they are cut-off canoes of the ordinary Lopliq type still in use. I am not quite convinced of the correctness of this explanation, but the coffins were certainly made on the same principles as those applying to the construction of canoes.

Culturally this lady belonged to the same people as those buried in Stein's cemeteries L. F., L. Q., L. S. and L. T. and at "Ördek's necropolis", i. e. the indigenous population of the Lou-lan kingdom. As already remarked, the affinities with Stein's graves are closer than those with "Ördek's necropolis", a circumstance explained by the geographical sitution of the burial places, Stein's and Grave 36 forming a local group. On the other hand, it is more than likely that there also exists a chronological difference, "Ördek's necropolis" being somewhat older than the other indigenous graves around Lop-nor.

LIST OF ANTIQUITIES FROM GRAVE 36 (Single grave b)

36:1. Pointed head-dress of light yellow, rather thin felt. The back part has partly covered the neck and been gathered there with white thread now almost disappeared. Two lappets have met under the chin; they have partly a red edge stitching. On the left side two pegs are inserted, each about 30 cm. long, wound round with thin sinew fibres and, over that, red woollen yarn; the tops have a rich feather tassel. Round the top part of the head-dress seven woollen strings are arranged horizontally, being threaded through the felt in four places. Between these strings a split ermine skin is fastened with light red woollen strings threaded through the felt. The head of the ermine hangs down in front. Very good condition. H. from lappet to top 32 cm. Pl. 26:3.

36:2. Inner cap of rather thin, dark-brown felt, gathered together with brown woollen thread at the neck. Lappets tied with brown woollen cord under the chin. Finished all round with scallop stitch of brown wool. The right lappet is darned in two places. At the lower edge of the lappets small ends of red woollen yarn are inserted. H. 27 cm. Pl. 26:2.

36:3. Part of a mantle, right side, of fine soft wool, dark brown with yellowish and red borders. The piece represents the complete length of the garment with a fringe of warp at the lower end = end of the fabric, plain selvage at the other end = beginning of the fabric, selvage with a cordlike edge along it.

The main part is tabby weave, the same yarn in warp and weft. The warp 50, the weft 40 threads to 10 cm.

Borders of rep in yellow with edges of yellow and red checks, 5—7 mm. wide. Along the cordlike edge there is such a border of warp rep, about 5—5.7 cm. wide. Across the mantle are two similar borders, 2.6 cm. wide, of weft rep, one 4.6 cm. from the fringed edge, the other 4.5 cm. from the selvage on the opposite short side. Yellow and red wool firmly spun, th. about 1.8 cm. In the warp rep border 75 threads to 5 cm., with a pair of wefts in each border shoot. The weft rep border has 22 threads to 2 cm., over two of the brown warps, gathered together.

On both sides of the mantle at each junction between the transverse and longitudinal borders is a braid about 6—7 mm. wide, made of yellow and red wefts from the transverse border. L. of braids 5—6 cm.

The fringe is made of two warps twisted, gathered in links, one by one fastened to the lower edge of the fabric, three links twisted together

into the end of every fringe. Th. about 6 mm. L. about 10.6 cm.

L. of warp direction excl. fringe 171.4 cm. L. of incompl. weft direction 32.1 cm.

Near the cordlike selvage and somewhat above the middle the mantle was gathered into three small bags containing Ephedra twigs. Only one of these is preserved. Pl. 26:4 and Fig. 32.

36:4. Footwear of raw hide, made after about the same pattern as 5. E:2. The hair turned outside on the sole, otherwise turned inside. The top and upper part in one, with only one seam running from the opening to the front and sideways. The tops have been tied together with one strap at each side. The upper edge of the tops is serrated. Into the toe are inserted three red ends of wool and remnants of small feathers. Between heel and arch the sole has a notch at each side. Both soles are joined in front with a narrow piece. The shoes seem scarcely to have been used. L. 26.5 W. 10.5 H. 18 cm. In each shoe an inner sole: a square piece of brown lambskin with curly wool, finished with scallop stitching of red, untwisted woollen yarn 3—4 mm. thick. The sole in the left shoe 11×19 cm., the one in the right shoe has one end torn off, the edging is gone, size about 10×24 cm. Pl. 26:6.

36:5. Small basket, plaited of grass and dicotyledonous roots and stems. Of the same shape and make as those from Cemetery 5, but decorated with net pattern. Cf. Mr. Ljungh's analysis, Appendix II. Thick handle of brown woollen cord. The basket is partly broken. H. 19.5 cm. Diam. about 11 cm. Pl. 26:1.

36:6. Basket cover of white felt. Has been attached with white strings on top of —:5.

36:7. Portion of fringe-like loin-cloth consisting of braided white woollen cord, round which alternately red and undyed white long double-wool strands have been laid and drawn together with a loop. Two undyed strands of wool, each folded with one loop alternating with two double red strands laid together. The strands of white wool are undulated and slightly felted, th. 4 mm. The red strands are slightly felted and untwisted, spun thread th. 2 mm. L. of loin-cloth 40 cm., longest end of fringe 28 cm. The quality and colour of the wool the same as 5:148-149. Pl. 26:5.

36:8. Doll made of wool rags fastened on to a small wooden peg of the same model as Pl. 9:2. L. of peg 94 mm.

Round and over the pin are thick strands of light greyish brown and blackish-brown wool, also finer strands of wine-coloured wool, all more or less felted, th. about 3—1 mm.

The top part forms the doll's head. Around the "face" a light greyish yellow strand of yarn, behind this a wine-coloured strand. About 4.5 cm. below the "face" the combined "neck" and "waist" are wound round with a blackish brown coarse folded strand with a loop holding some short brown grass(?), fixture for girdle(?). Round a part of the waist and hanging down between and around strands of yarn is laid a piece of coarse fabric of soft white wool. The woollen fabric is in plain weave and does not recur among the other Lop-nor finds. The warp is firmly twisted, th. 2 mm., 3 threads to 1 cm. The weft in shoot two threads parallel, vaguely spun; two double threads to 1 cm.

Size, excl. hanging strands, 14 cm. Pl. 11:2.

36:9. Small bundle of sinew-fibres and dark and light wool, twined two and a half times with fulled felt, thin and fine and wound five turns with red wool, th. 3 mm., of the same colour and quality as the felt. L. 9 cm.

36:10. Brown woollen string, L. 258.6 cm. Th. 3 mm.

36:11. Braid, two pieces of the same kind, of white wool, th. 2 mm. Braiding made of eleven strands of yarn over one under one thread. W. about 1 cm. L. 28.7 and 21.1 cm.

36:12. Human hair, dark brown, partly turned grey.

36:13. Tress of dark brown hair, the upper end tightly wound round with string. L. 61 cm.

36:14. Small wooden comb, consisting of eleven round teeth (one missing) inserted in a piece of sinew. L. 6.5 cm. Br. 6 cm. Pl. 27:10.

36:15. Pin of hard wood with barrel-shaped head decorated with four transverse bands, each bordered by a row of small incised triangles. L. 147 mm. L. of head 56 mm. Pl. 27:8.

36:16-17. Two pins of hard wood. The barrel-shaped heads are decorated with nine rows of small incised triangles, their points turned upwards. The rows arranged in groups of three. The triangles have been filled with red. L. 163 mm. L. of heads 47 mm. —:16 Pl. 27:7.

36:18-20. Three wooden pins of the same kind as —:16—17 but with plain heads. L. 154—134 mm. L. of heads 48 and 43 mm. —:20 Pl. 27:3.

36:21. Bone pin with spool-shaped head. Smooth surface. L. 10 cm. Pl. 27:4.

D. "RUIN II" WITH GRAVE. (NO. 37).

On May 7th, Dr. HEDIN discovered what he calls Ruin II, not very far from the first mass-grave in the delta. There was a small wooden structure on a terrace 13.2 m. above the water level. HEDIN calls it a ruined house. Of course it may have been a house, but it may as easily have formed part of a tomb structure, because at a depth of 1 m. they came across a grave.

There was no proper coffin, only two horizontal logs placed parallel to each other. With the ends resting on the logs were nine irregular wooden boards 39—44 cm. long, and covering fragments of a skeleton.

Fragments of a pair of raw-hide slippers, and two baskets were taken from the site. One of them, Pl. 25: 5, is of the same well-made type as those usually found in the graves of the autochthon Lou-lan people. The pattern is not exactly that found on the baskets from "ÖRDEK's necropolis" but resemble the decoration of the small baskets found in the Lou-lan region. The other is a big flat shovel-shaped basketwork of a type that is still used for winnowing corn in China, Turkistan, India and so on, Pl. 25: 11. In grave L. S. 3 STEIN found three of these basket "trays" covering the coffin (Stein 1928, Pl. XXVIII). That our specimen has been long in use is seen from the repair of the bottom.

LIST OF ANTIQUITIES FROM "RUIN II" OR GRAVE 37

37: 1. Small basket, neatly plaited; small, nearly flat bottom surface, the wall widening upwards (though not so much as is seen in Pl. 25: 5, which shows the basket in its present flattened shape). Decorated with horizontal zig-zag bands of glossy grass. Part of the rim damaged. Has had a handle of strings fastened on the outside of the wall with separate coils. Manufactured in the same way as the baskets found in Cemetery 5. H. 15.5. cm. Diam. about 12 cm. Pl. 25: 5.

37: 2. Shallow basket-work tray of long narrow shovel-shape, with upturned edge round one end, which is rounded. The other end is finished off flat and square. The basket-work is strongly woven. Damaged, partly mended with a piece from other basket-work of finer weave. Size about 60×40 cm. Pl. 25: 11.

37: 3-4. Two pieces of the same thin basket-work as 5. G: 2.

37: 5-6. Toe part from a pair of raw hide slippers, the hair turned inside. Sewn with the seams turned inwards.

E. MASS-GRAVE 2. (NO. 38).

On May 19th Dr. HEDIN's men discovered another cemetery on a mesa situated a few hundred metres to the east of STEIN's locality L. F., which is a ruin and a cemetery. Across the mound there was a kind of palisade running from SE to NW, 3.9 m. long, the distance between the two lines of poles being from 0.86 to 1.04 m. Near this palisade four graves were found, one of which was examined.

It contained eight skulls as well as other human bones. Of the funeral deposits

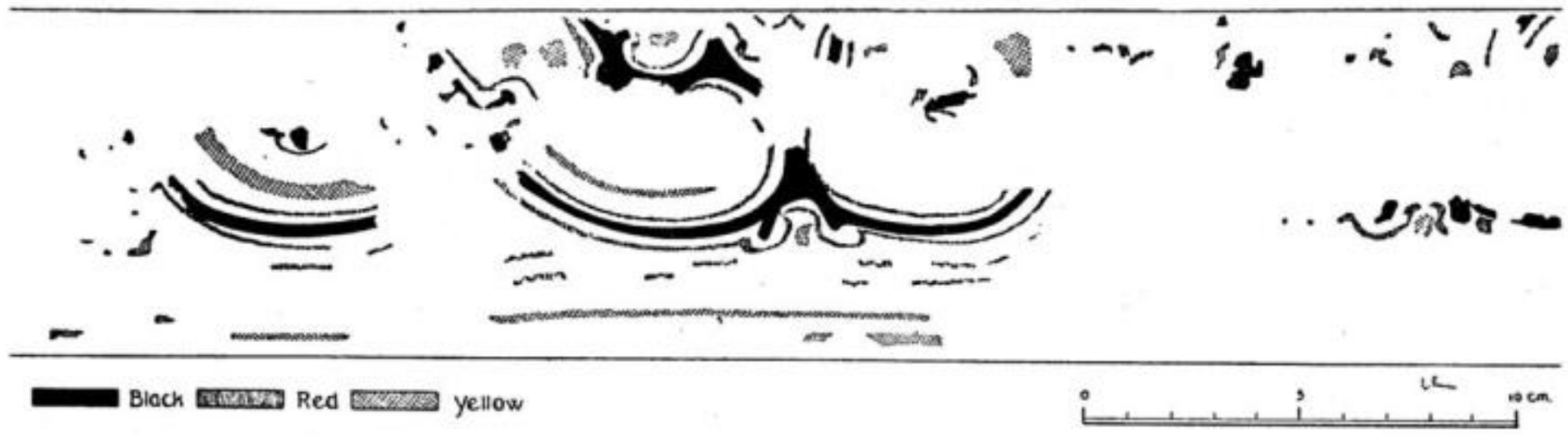


Fig. 33. Unfolded design of the lower part of the lacquered vessel no. 38: 12.

some samples were brought back, and among these the following are worth mentioning.

No. 38: 1 is a head-dress of plain red-brown silk, fitting tight to the head. Pl. 23: 2 is a piece of silk with a die-printed pattern: some kind of figure of curved lines repeated six times, a rather early example of printed textiles.

A coarsely made clay cup with a handle, Pl. 27: 5, and two wooden food-trays or troughs, Pl. 27: 1—2, were recovered, the latter having dried-up remains of sour milk sticking to the surface, apparently a food-offering to the dead. (Cf. Appendix II).

There was also a much broken cylindrical vessel of a finer quality than the rest of the objects. It was once lacquered in four colours with a design, the remains of which are seen in Fig. 33. When complete the vessel was probably twice as high as seen in the figure, and fitted with a small handle. A similar vessel, also from the Lop-nor region, is published by Mr. HUANG WEN-PI (Huang 1933, I, Fig. 27).

The two wooden combs Pl. 25: 4 and 6 are of the ordinary Han type. Both of them were roughly re-shaped in ancient time, probably after having been slightly damaged.

The content of this second collective grave is less varied than that of the one first discovered. It also contained fewer individuals. I have also the impression that it was searched in a more careless or rapid way than the first one, and that this is partly the cause of the poorer result.

LIST OF ANTIQUITIES FROM MASS-GRAVE 2

38: 1. Oval cap of silk in plain weave, various shades of brown. The crown consists of three layers: furthest out light reddish-brown silk rep; interlining of coarse yellow fabric in plain weave, of animal's hair; inner lining of loosely woven yellowish-brown silk rep. Around the crown a strip, folded and sewn together on the inside, of nutbrown rep, attached towards the front to a piece of lighter reddish rep of the same kind as in the crown. The strip at the back is sewn on to the crown and tied in a knot in front over the forehead. Along the crown from back to front a seam runs through all three materials.

38: 2. Piece of yellowish silk felt, tied in a large knot.

38:3. Tress of black hair and plait of yellowish white wool.

38:4-5. Two pieces of wool rep, undyed and deep red.

38:6. Narrow strip of silk rep, probably undyed, discoloured to yellowish brown, with printed pattern in black China-ink: incomplete scrolls, repeated six times. Pl. 23:2.

38:7. Fragm. of yellow silk rep with attached strip of green silk rep and three small fragm. of a green strip with the edges turned in.

38:8. Large piece of undyed (?) yellowish-brown silk rep with one selvage.

38:9. More or less triangular piece of yellowish-brown silk rep with two seams and hem along biased edge.

38:10. Small fragm. of a rug, woven in twill of grass fibre, probably a single thread of animal's hair.

38:11. Small earthenware cup with ring-shaped handle, and opposite to this a small lip. Flat bottom. Roughly shaped. Light-red ware intermixed with grains of sand. Rim damaged. Diam. of bottom 7.5—8 cm. H. 8 cm. Pl. 27:5.

38:12. Fragm. of cylindrical wooden vessel with traces of lacquer. The round bottom consists of a flat piece, lacquered red on the inside, brown on the outside. Diam. 11.1—11.3 cm. The wall consists of a thin pane shaped into a cylinder, the ends overlapping and glued together (now open). The larger part of the wall is preserved from the bottom to a height of 8 cm., though broken in several pieces. On the outside the ground has been brown, the pattern red, black and yellowish-brown, all in lacquer. The preserved parts of the pattern is shown in Fig. 33. The inside is lacquered red. Thickness of wall increases towards top.

A fragm. from the upper rim is lacquered red on the inside and brown on the outside, 7.6 cm. high. Traces of red and yellow stripes on the outside along the rim. A small flat handle, 1.8 cm. wide, in the shape of half a cylinder, 1.7 cm. below the rim. Only the ends remain sticking in their holes in the wall. On the inner side of the wall the ends have been joined together with two small wooden needles, 1.8 cm. long. This fragm. of an upper rim might belong to another vessel.

38:13. Three fragm. of an oval wooden food-tray or shallow trough, with four low legs, made out of one piece. The legs are round in section, about 2 cm. high. The original size of the tray probably 46×28 cm. For reconstruction cf. Pl. 27:1.

38:14. Wooden trough, quite shallow, rectangular, with rounded corners and slightly rounded ends, which are somewhat higher than the long sides. L. 45 cm. Br. 25—26 cm. H. in the middle about 5 cm., at the ends about 8 cm. Pl. 27:2.

38:15. Wooden comb with high back, originally parabolic, and fine teeth. Cut off in ancient times. H. 7.9 cm. Br. 5 cm., originally broader. Pl. 25:4.

38:16. Main part of a wooden comb with very coarse teeth. The high back irregular, deformed. H. 5.9 cm. Br. 5.2 cm., originally broader. Pl. 25:6.

38:17. Wooden peg, semicircular section, the ends tapering and having a step. 17.5 ×0.8 cm.

38:18. Wooden peg like —:17 but without steps at the ends. 18.2×0.9 cm.

38:19. Small thin pointed wooden peg. L. 18.2 cm.

F. GRAVE (?) NEAR HEDIN'S CAMP 80. (NO. 39)

Camp 80 in Qum-darya's delta served as a base for Dr. HEDIN and Mr. CHEN during their common efforts to survey the Lop lake with canoes. During their absence some of the servants collected about one hundred beads of glass, shell, and carnelian. Mr. CHEN, who handed over these finds to me, was of the opinion that they originated from one or more graves which the servants had come across on a mesa in the vicinity of the camp.

The glass beads are all small, mostly white translucent, but a few had originally

been gilded, Pl. 15: 19. The double-bead Pl. 15: 13 had also been gilded and recalls beads from Lou-lan. Eleven small white beads are identical with some from Cemetery 5 (cf. Pl. 15: 15). Pl. 15: 12 depicts thirty-one diminutive beads of violet glass. Pl. 15: 17 is of carnelian, and Pl. 15: 18 probably of frit.

FINDS PROBABLY FROM ONE OR MORE GRAVES NEAR HEDIN'S CAMP 80

39: 1. Sixty small glass beads, two of which are yellow (one even showing traces of gilding) the rest white. Diam. 5—3 mm. Pl. 15: 19.

39: 2. Thirty-one very small beads of violet glass. Diam. 2—1 mm. Pl. 15: 12.

39: 3. Double-bead of gilt glass. L. 7 mm. Pl. 15: 13.

39: 4. Eleven small flat beads of shell, identical with 5: 21. Have been threaded on a brown woollen string. Diam. 4 mm.

39: 5. Spherical carnelian bead. Diam. 17 mm. Pl. 15: 17.

39: 6. Spherical carnelian bead. Diam. 9 mm.

39: 7. Spherical bead of frit (?) with parallel grooves. Once possibly covered with blue glaze. Diam. 12 mm. Pl. 15: 18.

G. CONCLUSION.

Among the graves along The Small River found by me there are only single graves, but those found by Dr. HEDIN in the delta consist both of single graves and mass-graves. If we classify them according to their contents we find that Cemetery 5 ("ÖRDEK's necropolis"), Grave 36 and 37 are autochthonous, whereas the two mass-graves and Grave 35 are Chinese. As to the minor burial places 6 and 7, they may be Indian (and Chinese?). I leave No. 39 out of consideration as we know too little of the circumstances around this "find".

Let us turn first to the autochthonous graves.

As pointed out in the description of the outer setting of the funeral site called "ÖRDEK's necropolis" as well as in the treatment of the individual graves, the uniform type of coffin, with a small variant, is noteworthy, especially as this site is the largest cemetery known from the Lop-nor region. The same homogeneity is a characteristic of the funeral deposits, as far as they can be ascertained after the deplorable destruction caused to most of the coffins by both man and Nature. These facts prove that those buried have had one and the same civilization, and most likely belonged to one and the same people.

It is to be regretted that the circumstances did not allow of any complete mummy being brought back to Europe for professional examination. This was, however, impossible on account of practical difficulties in connection with transport, and even the "finds" themselves led to complications with certain officials, as Dr. HEDIN has told in his personal narrative (Hedin 1936). The skulls lying exposed

were defective or partly destroyed by the elements. We have thus only some photographs of mummies from this Cemetery 5 but no measurable bodies.

From comparisons with STEIN's cemeteries from the regions more to the east, i. e. in and around the present delta, it is evident that our Cemetery 5 belongs to the same group as those which STEIN assigns to the autochthon Lou-lan population. STEIN brought away two skulls from this kind of graves. JOYCE characterizes them as belonging to *Homo alpinus*. Nowadays Homo alpinus is best represented among the Iranian-speaking hillmen of the valleys adjoining the Pamirs, and also forms a very conspicuous element in the racial composition of the present population of the Tarim Basin.

STEIN emphasizes the non-Mongolian features of the Lop-nor mummies, and I have been able, on the whole, to confirm his statement. One or two of the mummified heads at Cemetery 5 had, however, broad cheek-bones giving them a "Mongolian" look, but this might be due to the individual variations that occur in every race or type (Cf. the photo facing p. 209 in Hedin 1937). The long hair is a non-Mongolian feature.

In STEIN's grave L. Q. III the mummy had a red moustache, and in a partly destroyed grave 2.5 km. NNE of L. I. the corpse had fair hair (Stein 1928, p. 288), traces that would confirm the supposition of the race as non-Mongolian. In Mass-grave 1, which I have labelled as Chinese, Dr. HEDIN found human hair of dark-brown but also of red-brown colour.

If we compare the autochthon graves known from the delta region with "ÖRDEK's necropolis" we find less homogeneity in the first group. The types of coffin vary considerably, and so do the wooden monuments surrounding them, where such exist and have been preserved. The woollen textiles seem to be of a finer quality than those most common on "ÖRDEK's necropolis", the felt head-dresses are of thinner felt and more elegant, and the small baskets are decorated with another pattern than those from ÖRDEK's place. The triangle pattern on the wooden pegs also differs in some details. These phenomena do not denote anything but local or chronological variations in the handicraft of the same people. It is possible that the autochthon population living in the present delta region had closer relations with some other people, from whom they received cultural influences which somewhat changed their funeral customs. The people buried at "ÖRDEK's necropolis", on the other hand, seem to have been living isolated, at least from Chinese influence. As far as I know, none of the articles which are typical of the autochthon graves have been found outside the Lop-nor region.

Racially the autochthons may have been rather homogeneous over large parts of the Tarim Basin. The political divisions into many small kingdoms can be explained by the curious physical conditions prevailing: sharply defined oases separated by large desert regions.

From Chinese sources we know of intercourse between the Lou-lan people and

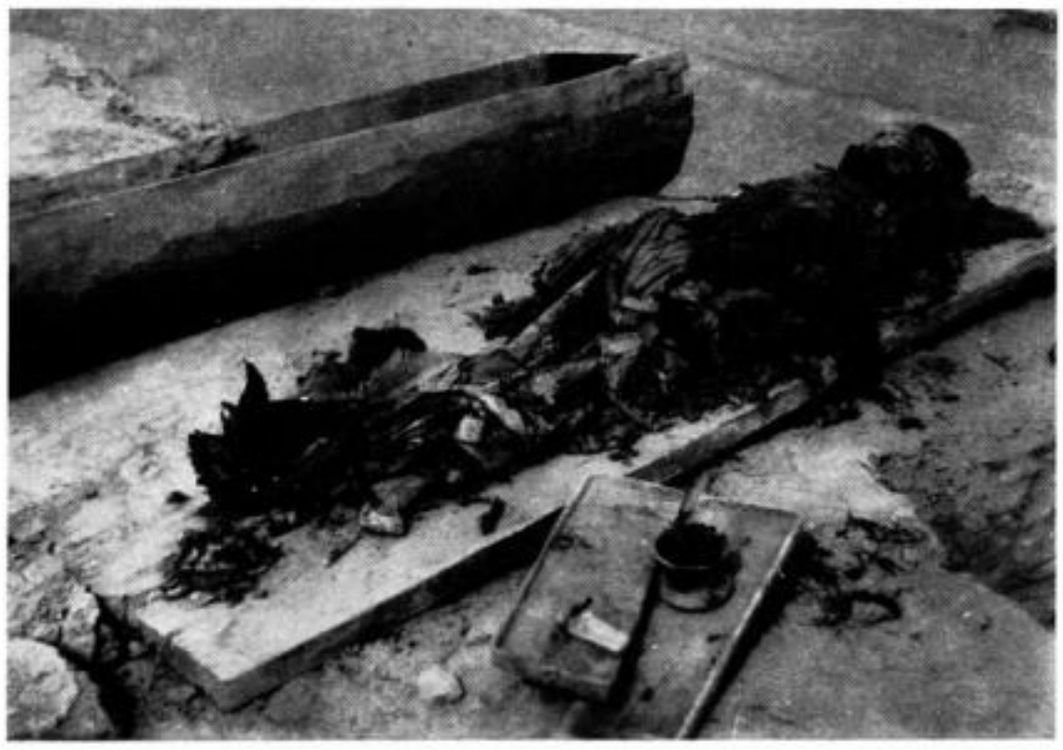
a Dr. Hedin at Mass-grave 1. Photo by Mr. Chen.





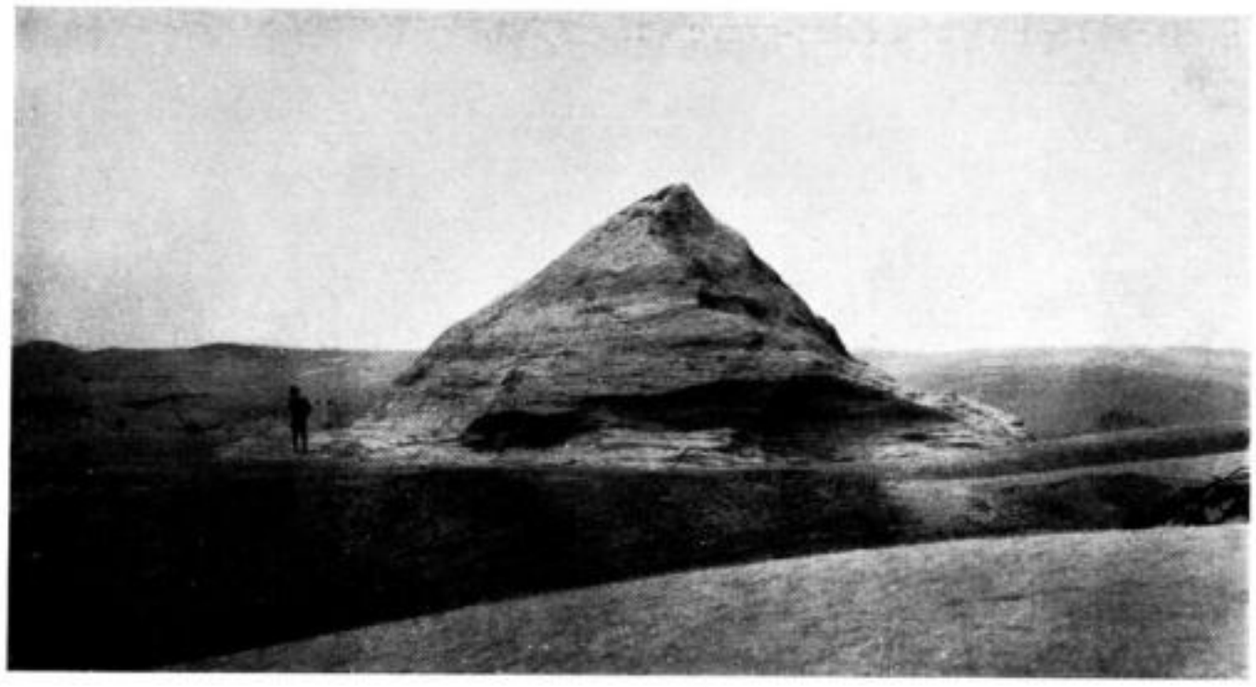
b. The mummy in Grave 35. Photo by Mr. Chen.

c. Grave 35. The mummy removed from the coffin and resting on the lid. Photo by Mr. Chen.



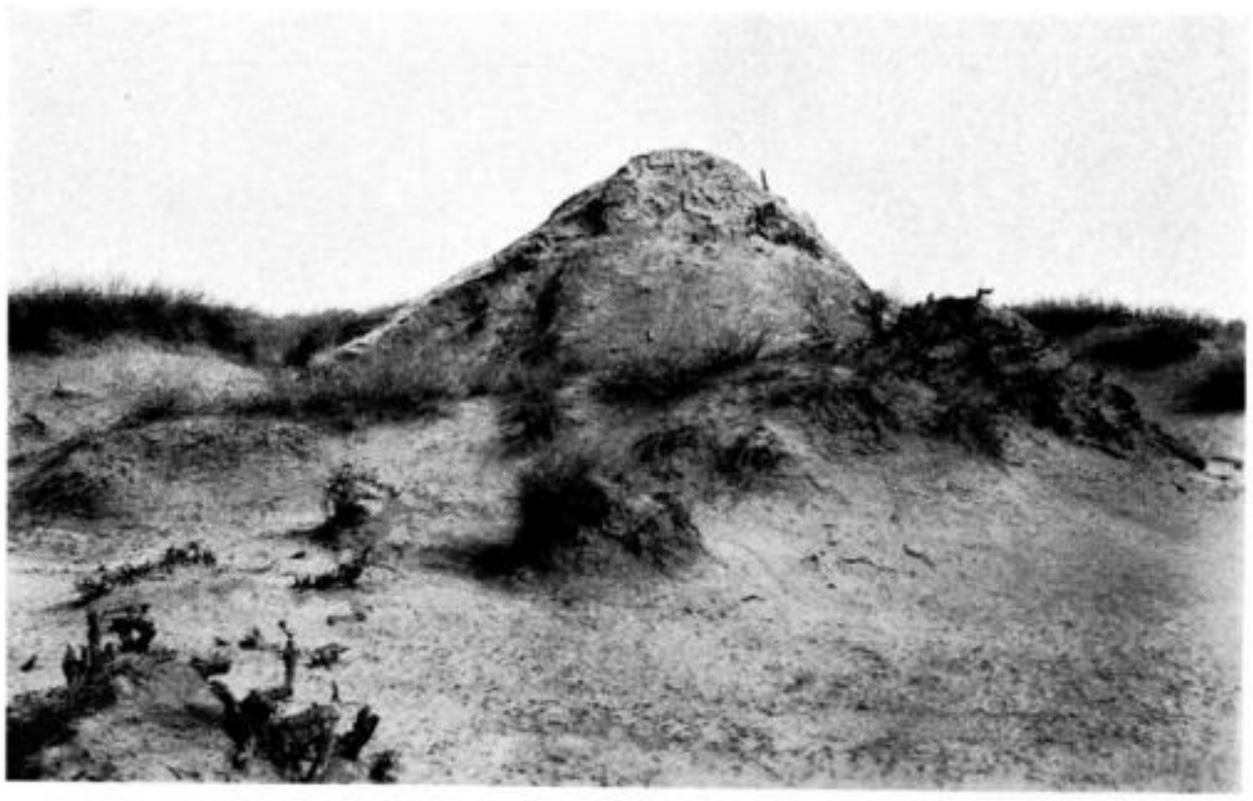
Pl. XIV.

a. The ruined watch-tower near The Small River, seen from N.





b. The ruined watch-tower Sanje or Tsonch (Stein Y. VII) between Korla and Ying-p'an, seen from E.



c. The ruined watch-tower near Sai-cheke (Stein Y. VI) between Korla and Ying-p'an, seen from SW.

the Hsiung-nu (Huns) and this is hinted at also on p. 166 (and Bergman 1935 c, pp. 106—108), though there have been no close affinities between the two peoples. This is attested for instance by the textiles. Miss SYLWAN has drawn my attention to the fact that the woven fabrics of wool from the Lop-nor graves are technically of a higher quality than the felt from there. The Lou-lan people were skilful weavers and knew well how to utilize their primitive resources. We know nothing about any definitely Hunnish textile fabrics,[1] but we are fully aware that the Huns manufactured e. g. excellent felt carpets (the Noyan-ola tombs). In this respect the Mongols are true successors to the Huns: they have not learned the art of weaving to this day, but they produce felt of high quality. Miss SYLWAN will enter more thoroughly into this matter in her forthcoming publication on the textiles.

The Chinese expansion into the Tarim Basin started in the last decades of the second century B. C., and the Lou-lan kingdom must have been the first part to be subdued. At the beginning there were hardly any Chinese settlements here. In B. C. 49 the military station T'u-ken existed, and by and by the Chinese influence must have made itself perceptible. The homogeneity of the graves at "ÖRDEK's necropolis" and the absence of silk stuff there might be used as arguments for regarding this cemetery as anterior to the time of the Chinese domination of the Lou-lan kingdom.

Finally we will touch on the question of the chronology of the Chinese graves. The Lop-nor mass-graves are no doubt secondary graves and have nothing in common with, for instance, Siberian mass-graves. The primary tombs have probably in most cases consisted of single graves, such as Grave 35 (and possibly double-graves). If these latter were placed on too low ground where inundation would one day threaten the tombs with destruction, or if they were exposed to the ill-effects of the ever active wind-erosion, the corpses had to be moved and reburied at a safer place in accordance with the pious Chinese custom to take care of the dead relatives. Only the tops of the big mesas could afford a relatively safe resting place for the dead. Inundation from the river could never reach so high, and the effect of wind-erosion was also less strong on the hard mesa material than on the rather soft yardang clay. STEIN, who advocates this theory, is of the opinion that the Chinese settlers in Lou-lan, when they perceived the grave situation approaching through the diminishing water-supply in the Tarim delta, collected the contents of all exposed graves before leaving the region and reburied them in safe places on the high mesas.

This explanation is quite reasonable and explains the mixed contents of the collec-

[1] I am not at all convinced of the correctness of CAMILLA TREVER's statement when she ascribes certain of the woollen textiles from Noyan-ola to the Huns. And the examples of Hunnish textiles which ALFÖLDI mentions in his review of TREVER's book (in Artibus Asiae 6, pp. 160 ff.) may refer to embroideries or felt carpets and not to really woven materials.

tive graves as well as their incomplete skeletons. The sepulchral articles in each grave must consequently be of a somewhat varying age. We therefore cannot date these objects more precisely than within the earlier and middle part of the Lou-lan period, say 100 B. C.—300 A. D. Most of the datable objects in the mass-graves seem to point to the later Han dynasty. Our Mass-grave 1, for instance, cannot have been built earlier than the end of the second century A. D., probably later. This is attested by Prof. KONOW's dating of the Kharoshthi script on the silk strip No. 34: 65.

I have to object to the method used by STEIN in dating one of the Chinese silks found at Lou-lan. He compares his L.C.x.04 with T.XXII.c.0010 a, the latter from a refuse-heap near one of the watch-towers on the Tun-huang Limes, where a wooden record dated 98 B. C. was also found. If these objects had been excavated from a single grave the date of the record would have been more valid for the silk. Now they originate from a refuse-heap which has been long "in use", and under such conditions we have to reckon with the whole period of occupation of the ruin to which the refuse-heap belongs, and we thus come well down into the second century A. D. Only if we count in this way are we on the safe side. The stylistic analogies are also far from convincing, as can be seen from the reproductions. This date has nevertheless been generally accepted and quoted in all cases where the chronology of the Lou-lan silks has been considered. I do not deny that both of the silks are among the oldest known from Central Asia. They may perfectly well be of the first or even the second century B. C., but such a statement must be based *only* on stylistic criteria.

When STEIN comes to this silk L.C.031b and compares it with the silk piece T.XV.a.002 from another Tun-huang tower with MSS. from B. C. 53 to A. D. 137, he applies these chronological limits to the Lou-lan silk. Here his method is unassailable, and the stylistic analogies are evident. These years do not, however, constitute *absolute* limits for the occurrence of these silks in Central Asia.

*

The barrenness and desolation of the Lop desert is only intensified by the occurrence of so many grave-yards. The best preserved mummies give more an impression of human beings asleep than dead, and the few who have experienced the strange sensation of confronting them have stood in amazement at the marvel of Nature which has kept them so life-like for two milleniums. In the delta region the high mesa plateaus, which had the same appearance then as they have now, were chosen as grave-yards in order to secure the dead from moisture and animals. There the people of Lou-lan are resting in their last sleep, all faithfully joined in death. From their relatives they have got provisions and symbolic objects meant to enable them to carry on their accustomed life also beyond the grave. Uncounted storms have roared over their heads, stars have glistened over the tombs on quiet nights, and

every summer the hot glowing sun has burned down on their tombs. A peaceful resting-place they certainly had, until strangers came and disturbed them in trying to reveal something of the unknown and to dispel something of the oblivion which has for so lang rested over this lonely part of Central Asia.

5. THE RUINS OF THE LOP DESERT.[1]

A. INTRODUCTION.

The ruins of solidly constructed fortresses with walls of stamped clay, stupas of sun-dried bricks, and dwelling houses or temples with less solid walls but having reinforcements of timber, form the most conspicuous remains of human settlements of bygone ages in what for so many centuries has been an absolute desert. Thanks to the efforts of all visitors — in reality they are not very many — to these desolate regions quite a number of ruins have been discovered and put on record. In all probability many more await discovery, though probably none of any marked size.

SVEN HEDIN was the first to discover ancient ruins in the Lop desert, which happened on his expedition 1900 and 1901. He has fully described these events in his great work "Scientific Results of a Journey in Central Asia", Vol. II, and in his personal narrative "Asien". I have already discussed these questions in BMFEA 7, pp. 72—74.

The next to visit these grounds was the American geographer ELLSWORTH HUNTINGTON. Between Altmish-bulaq and the Lou-lan station he, early in 1906, came across a good-sized house on the top of a great mesa, and half a mile from there were parts of an ancient s a t m a or shepherd's hut of reeds (Huntington p. 262). On his map he has marked seven ruins (beside the Lou-lan station) between Altmish-bulaq and Chivillik-köl. Save the two just mentioned he gives no particulars as to their appearance or exact position, and it is impossible to correlate them with the ruins found by later explorers. I have thus been unable to enter them on my maps. As far as mentioned in his book no collections of antiquities were made.

Sir AUREL STEIN surveyed the Lou-lan region both in the winter season 1906—07 and 1914, visiting all ruins discovered by HEDIN, and tracing many others. In the following I use STEIN's designations also for those ruins found by HEDIN, cf. the map Fig. 37. In practically all localities he undertook excavations which yielded rich collections of antiquities of about the same kind as those brought to light by HEDIN.

The Japanese scholar TACHIBANA paid a visit to the Lou-lan station in 1910, but I am unaware of any discoveries of ruins made by him.

The Chinese archaeologist HUANG WEN-PI, who took part in Dr. HEDIN's great

[1] I have discussed the Lop-nor graves anterior to the ruins from there because the former have yielded much more important finds, though it would have been more logical to start with the ruined dwellings and take the graves last.

expedition to Sinkiang in 1927—30, travelled, in 1930, to the northern part of the Lop-nor basin. There he located a ruined station and several structures at one of the three northernmost freshwater bays of the present lake Lop-nor. From the context of some Chinese records on wood bearing the dates B. C. 49 and B. C. 12—9, which were excavated by HUANG, he has stated the name of the ruin to be T'u-ken (Huang 1930). HUANG's discoveries here are of outstanding importance for the chronology of the Lou-lan settlements as his dated manuscripts are the oldest known from the whole area.

HÖRNER and CHEN, in 1931, passed HUANG's place T'u-ken, and it is thanks to their mapping that the position of the ruin has been fixed. According to HÖRNER (1931, p. 371) there are ruins of one big house with partly standing timber posts from the walls, and one smaller, more solidly built structure. Probably there were formerly still more buildings.

HÖRNER and CHEN found the upper part of the iron knife Pl. 30: 10 and the bronze tube Pl. 30: 5 in these ruins. The knife is of a Chinese Han dynasty type, and was at least 30 cm. long when complete. It may be labelled as a weapon. The bronze tube is the upper part of a hooked socket which protected the end of a wooden rod in a canopy (cf. p. 168). Its nearest parallel is from the tomb of WANG KUANG in Korea (Oba and Kayamoto, Pl. 84), which is also of the Han dynasty.

B. HÖRNER'S AND CHEN'S COLLECTIONS FROM THE LOU-LAN STATION.

The main site of the whole Lop-nor region, and its once military centre, is the ruined station of Lou-lan which Dr. HEDIN was fortunate enough to discover in March 1901, and from which he brought away a certain number of Chinese records on wood and paper besides various other finds. The manuscripts and the small finds were published by CONRADY in 1920, and after another fifteen years the wood-carvings were described by me together with a fuller treatment of all the small finds.

The ruins have been searched twice by STEIN, and also visited by HUNTINGTON, TACHIBANA, HÖRNER and CHEN. The latter is the only Chinese to have seen, in our days, what is left of this Chinese outpost on the Silk Road. He has visited the site thrice, which is more than any of the others have done.

The joint visit of HÖRNER and CHEN resulted in a collection of various small articles (listed as No. K. 13378 below), and CHEN's visits in 1934 gave an addition to this collection (No. 32 in the list).

Coins.

Of WANG MANG's issues Huo-ch'üan and Ta-ch'üan-wu-shih there were found two, and one specimens respectively, and of the normal Han dynasty Wu-ch'u

twenty-one specimens. Besides these there are one clipped Wu-ch'u, eight without outer rim, and twelve Wu-ch'u of small size, i. e. debased. Twenty-one "Goose-eyes" and twenty-two uncertain fragments were also recovered. No. 32: 57 may be a non-Chinese copper coin, but this is very dubious.

The discovery of these coins confirms the numismatic results arrived at through the studies of earlier Lou-lan collections.

Arrow-heads.

Two bronze arrow-heads with triangular section are of the ordinary Han type. Pl. 28: 43 has a triangular depression on each surface, and a short circular shank, whereas the specimen No. 32: 59 lacks both of these distinctions.

Pl. 28: 42, of iron, is either a tanged arrow-head or else some sort of awl.

Mirrors.

Pl. 28: 1—2 show two fragments from the rim of bronze mirrors of Chinese make, apparently of Han types. The first one has about the same decoration on the thick rim as the complete specimen from Ying-p'an (Pl. 15: 4). The second fragment is of the same type as Umehara 1933 Pl. 76, which is dated to the second or the third century A. D. The rim is thin with a low ridge just as is Pl. 28: 4. A third fragment, No. 32: 62 may be from the same mirror as the second one.

Pl. 28: 4 is from a small mirror with floral design in low relief, of the type Umehara Pl. 77—78 from the later Han dynasty, and No. K. 13378: 35 also comes from a mirror of this type.

For further discussion of the mirrors cf. p. 165.

Personal ornaments, strap fittings, etc.

The nice bronze finger ring Pl. 28: 37 has an oval ruby as bezel.

Pl. 28: 36 is another finger ring of bronze, a sewing ring. Besides these there is a fragmentary finger ring and a small piece of a second sewing ring.

There is a number of beads from Lou-lan, seventeen of glass, seven of stone and two of shell. The double-beads Pl. 28: 15—17 have exact parallels among HEDIN'S earlier finds (Bergman 1935 c, Pl. XIII: 11—13). Pl. 28: 6 is an eye-bead of blue glass and of inferior quality. Pl. 28: 25—26 are round beads made from the marine shell of a *Turbo*. The same material has been used for the fragmentary ring Pl. 28: 8, whereas HEDIN'S beads of shell were made of a *Quadrula,* i. e. a freshwater

shell (Bergman 1935 c, Pl. XIII: 23—29). A piece of an *Anodonta,* a freshwater shell, was also found here.

The glass object Pl. 28: 5 has also an exact parallel among HEDIN'S finds (Bergman Pl. XIII: 1). It is not a proper bead but has been attached to a rod of some kind as ornament. A third specimen was found by Dr. B. BOHLIN in a tower of the Tun-huang *limes* together with Han objects (MFEA K. 13473: 3).

Of other glass articles there are just a couple of sherds from vessels, No. 32: 138 is yellowish-white, translucent and has traces of large ground ovals of a kind occurring in HEDIN'S old finds from here. Two other sherds are of light green and uncoloured glass. All the glass objects are certainly importations from the eastern part of the Roman Empire, and it is interesting to observe how exactly the same Roman beads occur both in the Tarim Basin and in Sweden. It has now been proved by spectrum analysis that some of the Lou-lan glass objects from HEDIN'S old collection are certainly of western origin. This applies both to fragments of vessels and beads (Seligman 1938, Pl. IV: 7—9 and 12).

The simple bronze ring Pl. 28: 40 occurs in several examples in HEDIN'S old collection. Now we have also got a square one, Pl. 28: 41.

The two-looped button Pl. 28: 39 has a parallel in STEIN'S collection (Stein 1928, Pl. X, Badr. 0117, from Khotan), and there is also a specimen in The HALLWYL Collection in Stockholm (I: C, z. 2) besides several in MFEA, especially K. 11003: 1406 which has been gilt. This button type seems to be Chinese.

Diminutive bells are well known from this region, but the specimen Pl. 28: 11 is extra small.

It may appear a little risky to reconstruct such a fragment as Pl. 28: 38 but I am convinced that it has been of about the same shape and had the same function as those depicted in the publication of the Keishu Gold-crown Tomb (Hamada and Umehara Fig. 33), i. e. a heart-shaped hinged girdle fitting. The Korean specimens are not more precicely dated than within the Six dynasties (265—589).[1] They are supposed to go back to nomad prototypes.

The two identical strap fittings Pl. 28: 34—35 of thin bronze have been fitted on a girdle or strap to suspend rings.

There are no complete belt buckles from the Lou-lan station, only three possible tongues of bronze buckles.

The leaf-shaped plate Pl. 29: 5 has iron rust at the broad end. In shape it coincides with Pl. 29: 7 but its use is unknown.

As there is some refuse from bronze casting here as well as in many other places in the surroundings, the manufacture of various bronze articles must have taken place locally.

[1] HENTZE'S opinion that the gold crown tombs are of the Han dynasty as stated in his paper in OZ 19 is difficult to understand.

Other metal objects.

The lead hook Pl. 28: 48 has possibly been used as a weight in some way or other. Of such small sinkers as Pl. 28: 44, 46 there are eight specimens. They are all of lead and are quite common in the Lop desert.

The thin small lead disc Pl. 28: 33 with its irregular hole may be a coin, but it is very uncertain. For lead coins cf. Bergman 1935c p. 100.

One iron point has already been mentioned. In the list I have labelled Pl. 29: 20 as a hammer but this designation may be questionable because of the small hole.

Several more fragments are of iron; some of them being from nails.

Wooden objects.

The comb Pl. 29: 1 is of a typical Chinese shape used in the Han period. It has many parallels from the grave finds described in this volume, in my Han dynasty finds from Edsen-gol (still unpublished), the Chinese tombs from Korea, and so forth.

A crescent-shaped small object Pl. 29: 6 has possibly served as the top ornament on a miniature stupa from some Buddhistic altar.

Pottery and stone articles.

From the Lou-lan station very few potsherds have been collected. No. 32: 174 is a shard from the flat bottom of a larger vessel which has had five steam holes. HÖRNER brought back a small pottery lamp, Pl. 28: 45 in the shape of a low, flat bowl.

Five spindle whorls are made of potsherds, Pl. 29: 14, two of bitumen. There are seven specimens of more or less regular whorls of blue limestone, some of which may have been used in spinning, others as net sinkers, Pl. 29: 8.

Four more or less complete whetstones come from here, Pl. 29: 19, made of slate. The smaller specimens have apparently been carried hanging at the girdle.

Of stone objects there is also a marble mace-head (broken in three) Pl. 29: 9, which may be compared with the more spherical specimen Pl. 29: 12 from the neighbourhood of Lou-lan. STEIN found a mace-head at Fort L. K. (Stein 1928, L. K. 0130) and a stone sphere of lamellar structure with a large hole at the Lou-lan station (Stein 1928, L. A. 093). From Vash-shahri there is another fragment depicted on our Pl. 37: 10. Such stone weapons were apparently in use during a long period of time.

On his last visit Mr. CHEN collected several small limestone and marble pebbles which must have been carried thither by man, as no stones exist in the clay desert around Lou-lan. Some of them seem to have been polished by art, and they may have been used in some kind of game.

LIST OF ANTIQUITIES FROM THE LOU-LAN STATION

Objects collected by Hörner and Chen, in 1931.

K. 13378: 1. Low, round earthenware cup, brick-red. Apparently a lamp as the rim has a small lip. Diam. 79 mm. H. 25 mm. Pl. 28: 45.

K. 13378: 2-4. Three spindle whorls made of grey potsherds. Diam. 40—26 mm. —: 2. Pl. 29: 14, —: 4. Pl. 29: 4.

K. 13378: 5. About half of a large spindle whorl of blue limestone. Diam. 62 mm. Th. 15 mm.

K. 13378: 6. Irregular sinker of blue limestone. Pl. 29: 8.

K. 13378: 7. Disc of blue limestone, unfinished whorl. Diam. 4 cm.

K. 13378: 8. Mace-head of white marble (in three parts), spheroid. Diam. 65 mm. Th. 31 mm. Pl. 29: 9.

K. 13378: 9. Fragm. of much used whetstone of slate with suspension hole. L. 85 mm.

K. 13378: 10. Eye-bead of blue glass. Two "eyes" empty, the other two filled with black, brown and white glass. Diam. 8 mm. Pl. 28: 6.

K. 13378: 11-13. Three fragm. of carnelian beads.

K. 13378: 14. Small piece of turquoise.

K. 13378: 15-18. Four Wu-ch'u coins, two of them fragmentary. Diam. 27—24 mm.

K. 13378: 19-20. Two fragm. of Chinese copper coins without legend.

K. 13378: 21-24. Four Wu-ch'u coins (three of them fragm.) without outer rim and with incomplete characters. Not clipped but cast in this way. —: 21 diam. 17 mm. Pl. 28: 28.

K. 13378: 25. Fragm. of Chinese copper coin with thick verdigris. Diam. 21 mm.

K. 13378: 26-32. Seven coins without legend, partly "Goose-eyes". Diam. 20—10 mm. —: 26 Pl. 28: 31, —: 27 Pl. 28: 30.

K. 13378: 33. Leaf-shaped bronze plate. At the broader end traces of iron rust. 55×33 mm. Pl. 29: 5.

K. 13378: 34. Fragm. of rather small thin bronze mirror with floral pattern executed in low relief in the middle part. The rim is slightly ridged, 2.4 mm. thick. Diam. has been about 86 mm. Pl. 28: 4.

K. 13378: 35. Small fragm. of bronze plate with relief design on one side. From a mirror?

K. 13378: 36. Small semicircular bronze fitting with a rivet. 15×10 mm.

K. 13378: 37. Fragm. of small bronze fitting with a rivet hole. Cf. No. 32: 90. 16×18 mm. Pl. 28: 34.

K. 13378: 38. Tongue-bar of bronze, from buckle, slightly curved.

K. 13378: 39. Part of bronze pin.

K. 13378: 40. Twelve bronze fragm. and refuse from casting.

K. 13378: 41. Small piece of slag.

K. 13378: 42. Oblong bar of lead, the pointed end terminates in a semicircular hook. Used as some kind of weight ? 65×14 mm. Pl. 28: 48.

K. 13378: 43. Small iron arrow-point ? square section on pointed part, otherwise circular. Portion of tang remaining. Might possibly have been an awl. L. 55 mm. Pl. 28: 42.

K. 13378: 44. Wooden comb with rather coarse teeth and parabolic back. 65×40 ×6 mm. Pl. 29: 1.

K. 13378: 45. Small crescent-shaped wooden object with a round central hole. Probably from top of miniature stupa. W. between points 41 mm. Pl. 29: 6.

K. 13378: 46. Portion of a shell of an *Anodonta*.

K. 13378: 47. Piece of sulphur.

Objects collected by Mr. Chen in 1934.

32: 1-2. Two fragm. of Chinese coins, Huo-ch'üan (Wang Mang issue). Diam. 21 mm.

32: 3. Fragm. of Chinese coin, Ta-(ch'üan-wu-shih). Wang Mang issue.

32: 4. Fragm. of Chinese coin, possibly = —: 1. Diam. 22 mm.

32: 5-7. Three Chinese coins, Wu-ch'u. Diam. 26 mm.

32: 8. Wu-ch'u coin with partly clipped rim. Diam. 24 mm. Pl. 28: 3.

32: 9-22. Fourteen fragm. of Wu-ch'u coins.

32: 23. Seventeen coin fragm. without visible legend, probably Wu-ch'u.

32:24-27. Four Wu-ch'u coins with insignificant, or entirely missing outer rim. Diam. 24—21 mm.

32:28-39. Twelve Wu-ch'u coins, three of them fragmentary, the outer rim missing, and cast so small that the legend is only partly visible. Diam. 20—14 mm. —:36 Pl. 28:29.

32:40-53. Fourteen "Goose-eye" coins. Diam. 14—8 mm. —:49 Pl. 28:32.

32:54. Small coin, possibly a late Wu-ch'u. The size is that of a "Goose-eye" but the shape is more regular. Diam. 11 mm.

32:55-56. Two fragm. of "Goose-eyes".

32:57. Non-Chinese copper coin? covered with thick verdigris. Diam. about 16 mm.

32:58. Triangular bronze arrow-head with short, circular shank. The sides are slightly convex, each having a small triangular depression. 29×11 mm. Pl. 28:43.

32:59. Triangular bronze arrow-head with flat sides. The edges slightly rounded towards the base. 23×9 mm.

32:60. Fragm. of fairly large bronze mirror. The thickened rim, 23 mm. wide, has a "double-wave" band and a "saw tooth" pattern. Inside this runs a zone with "oblique comb tooth" pattern. Diam. has been about 14.5 cm. Th. of rim 3.5 mm. Pl. 28:1.

32:61. Fragm. of the rim of a bronze mirror. The rim, 13 mm. wide, is slightly thickened. Inside it are traces of a distinct star pattern. Diam. has been near 9 cm. Th. of rim 2.5 mm. Pl. 28:2.

32:62. Small fragm. of bronze mirror, possibly belonging to —:61.

32:63. Front part of bronze finger ring (broken in two) with an oval ruby as bezel. Pl. 28:37.

32:64. Small fragm. of bronze finger ring, hatched.

32:65. Sewing ring of bronze. Diam. 19 mm. Br. 8 mm. Pl. 28:36.

32:66. Fragm. of sewing ring of bronze. Br. 5 mm.

32:67. Bronze ring, made of a bent rod. Diam. 19 mm. Pl. 28:40.

32:68. Square bronze ring. 18×18×8 mm. Pl. 28:41.

32:69-71. Three fragm. of small round bronze plates with central hole.

32:72. Round bronze button with two big loops on the reverse side. The front part is slightly vaulted and has two steps. Diam. 23 mm. Pl. 28:39.

32:73. Small bronze button with a loop. Diam. 1 cm.

32:74-75. Two small bronze buttons with a pin on the reverse side. Diam. 14 and 12 mm.

32:76-78. Three small bronze rivets with vaulted heads and a small plate at the other end. Diam. 8 mm. L. 10 mm. —:77 Pl. 28:10.

32:79. Small bronze pendant shaped as a hollow pyramid. 12×11 mm. Pl. 28:9.

32:80. Small globular bronze bell. Diam. 9 mm. Pl. 28:11.

32:81-85. Five fragm. of bronze pins; at least two are from hair pins. —:81 is 65 mm. long.

32:86. Half of a heart-shaped bronze fitting, hollow; for the belt. Pl. 28:38.

32:87. Fragm. of bronze buckle?

32:88-89. One complete and one fragmentary tongue-bar of bronze from buckles. L. 24 mm.

32:90. Small double bronze mounting for strap, kept together by a rivet (broken in two). One end has a square part. 26×18 mm. Cf. K. 13378:37. Pl. 28:35.

32:91. Fragm. of double bronze mounting, possibly of the same kind as —:90.

32:92. Rectangular, thin bronze mounting with two rivet holes. 21×11 mm.

32:93. Fragm. of narrow bronze mounting with three rivet holes through slightly vaulted parts. Br. 8 mm., present L. 35 mm. Pl. 28:47.

32:94-96. Three fragm. of different bronze mountings or rods.

32:97. Eight small indeterminable bronze pieces.

32:98. Various bronze pieces, fragm. and refuse from casting.

32:99. Small lead disc with irregular hole, possibly a coin. Diam. 13 mm. Pl. 28:33.

32:100-107. Eight small lead discs with central hole, probably sinkers; oval or semi-circular in section. Diam. 16—12 mm. —:100 Pl. 28:46, —:106 Pl. 28:44.

32 : 108-109. Two flat lead pieces, one of which has two deep grooves.

32 : 110. Iron hammer (?) with rectangular hole near centre. 77×21 mm. Pl. 29 : 20.

32 : 111. Twenty-four small iron fragm. Some of them nails.

32 : 112. Semicircular ornament of yellowish-brown glass. The straight part is grooved. 12×8×6 mm. Pl. 28 : 5.

32 : 113. Barrel-shaped bead of white, striated chalcedony with crystals at one end. L. 14 mm. Pl. 28 : 12.

32 : 114. Fragm. of light-blue glass bead with three longitudinal grooves. Pl. 28 : 13.

32 : 115. Oblong yellow glass bead with three irregular ridges. L. 12 mm. Pl. 28 : 14.

32 : 116-117. Two double-beads of honey-coloured glass, once gilt. L. 10 mm. Pl. 28 : 15—16.

32 : 118. Double-bead of blue glass. L. 6 mm. Pl. 28 : 17.

32 : 119. Polygonal bead of dark-blue glass. L. 5 mm. Pl. 28 : 18.

32 : 120. Small dark-brown glass bead. Diam. 4 mm. Pl. 28 : 19.

32 : 121-124. Four blue glass beads, nearly spherical. Diam. 6—8 mm. Pl. 28 : 20-23.

32 : 125. Flat dark-blue glass bead. Diam. 12 mm. Pl. 28 : 24.

32 : 126-127. Two spherical beads made from the shell of a *Turbo*. Diam. 6 mm. Pl. 28 : 25—26.

32 : 128. Barrel-shaped bead of striated brown and white agate. L. 11 mm. Diam. 8 mm. Pl. 28 : 27.

32 : 129-133. Five fragm. of blue glass beads, two of which are from double-beads. —: 129 from an eye-bead(?) Pl. 28 : 7.

32 : 134. Fragm. of polygonal bead of rock-crystal.

32 : 135. Half of spherical bead of yellowish-brown glass. Diam. 8 mm.

32 : 136. Half of spherical bead of carnelian. Diam. 11 mm.

32 : 137. Fragm. of pierced turquoise.

32 : 138. Small fragm. of yellowish-white, translucent glass, probably from a vessel, with large, ground ovals.

32 : 139-140. Two fragm. of light-green and white glass, probably from vessels.

32 : 141. Small piece of turquoise.

32 : 142. Fragm. of small shell ring (made from a *Turbo)* with grooved surface. Pl. 28 : 8.

32 : 143. Piece of light-green, semi-translucent jade.

32 : 144-164. Twenty-one small pebbles of white or blue limestone. Some of them apparently polished by man.

32 : 165. Spindle whorl of bitumen, one side convex, the other flat and having four small impressions. Diam. 42 mm.

32 : 166. Spindle whorl of bitumen, the rim damaged? Diam. 29 mm. Th. 14 mm.

32 : 167-171. Five spindle whorls or sinkers of blue limestone, partly irregular in shape. Diam. 37-15 mm.

32 : 172. Spindle whorl or sinker, of thick, brown potsherd.

32 : 173. Spindle whorl of light-grey potsherd, one side flat, the other convex. Diam. 3 cm.

32 : 174. Potsherd from the bottom of a largish vessel with traces of five steam holes. Reddish-brown, hard earthenware with darker surface.

32 : 175. Whetstone of slate with suspension hole. 86×23 mm. Pl. 29 : 19.

32 : 176-177. Two fragm. of whetstones with suspension hole.

32 : 178. Small flake of brown jasper. Neolithic?

32 : 179. Some small pieces of sulphur or sulphur-ore.

32 : 180. Some small pieces of slag.

C. RUINS DISCOVERED IN 1931 AND 1934.

In 1931 Mr. CHEN found two ruined houses near to the north of the present head of Qum-darya's delta. The western one was a house of the same construction as Dr. HEDIN's Ruin I (cf. Fig. 34) but smaller. On the map Fig. 37 it is marked 401. Mr. CHEN made a trial excavation there and found the wooden object Pl. 31:8, which is no doubt a die. It can be compared with Stein 1928 Pl. XXVI, L. M. I. 012 though the marks are not identical. This is an uncommon shape of die and unusually large. The following articles were also recovered from here: a small piece of a fish-net with thin threads, a fragment from the sole of a shoe woven of hair, and a bunch of black feathers.

The eastern ruin, about 3 km. to the ENE of the other is described by Mr. CHEN as a site where a house was going to be built, there being about ten worked timber — like beams or posts — lying around. It is marked with the number 404 on the map Fig. 37. The bronze dress-hook Pl. 30:7 was found here. It is clumsy and of inferior workmanship, the "seams" from the casting are not removed, which makes it likely that the hook is of local make. It might very well be of the Han period when such long hooks came into general use. A very similar specimen was found in the tomb of WANG KUANG in Korea (Oba and Kayamoto Pl. 33:1).

8 km. NE of the Lou-lan station HÖRNER discovered the ruins of a pottery kiln close to 384 on the map Fig. 37 on the shore of a freshwater lake. The ground was quite strewn with potsherds at this site.

A few logs shaped by man were observed by HÖRNER in the desert about 13 km. east of the Lou-lan station, where they had formed part of a house not very far from the edge of the salt crust.

On the big mesa LM3 about 2 km. to the west of STEIN's castrum L. E. HÖRNER noticed the remnants of a cave. On the map Fig. 37 only the adjacent cemetery has been marked (No. 390). The inner wall was formed by the mesa clay in situ, the outer wall was built of blocks of salt-encrusted clay. The interior of the vaulted structure was plastered with clay containing straw. The cave was 1.5 m. wide, 1.3 m. high and had been more than 2 m. long. The only "finds" made here was a lot of bones of rodents. HÖRNER suggests that the cave had been used as a granary, where rats had feasted on the stores left, and been killed when part of the roofing crashed down on them.

This structure is of special interest as it is unique in the Lop-nor region.

In 1934, finally, HEDIN and CHEN found a hitherto unnoticed house to be treated here. In the same season Mr. HUANG WEN-PI revisited his ruin T'u-ken, but it is unknown to me if he made any discoveries at other places in the Lop-nor region. During this visit in 1934 Mr. HUANG found two wooden records on which are mentioned the granaries of Chü-lu-tzu and Chiao-ho-ch'ü. (Huang 1935). The first place is called Chü-lu in the Han annals and STEIN has placed it at Besh-toghraq.

LIST OF ANTIQUITIES FROM VARIOUS RUINS

Find made inside the walls of Stein's Fort L. K. 6/1—31.

K. 13369. Polished miniature axe or chisel of green chert. Thin and neatly made. The sharp cutting edge has rounded corners. 50×34×8 mm. Pl. 5:11.

Finds from a ruin, probably Stein's L. B. II. 14/1—31.

K. 13377:1. Spindle whorl of dark-blue limestone, wind-eroded on one side. Diam. 3 cm. Pl. 29:13.

K. 13377:2. Thin bronze fitting or suchlike with two holes.

K. 13377:3-5. Three small bronze fragments.

Ruined house 401 on N side of Qum-darya near the head of the delta.

K. 13401:1. Oblong wooden die, square section. One side blank, the second has three carved lines perpendicular to the length of the peg, the third side is covered with six crosses, the fourth side has a figure shaped like an hour-glass or the Chinese seal-character "Wu" carved on the middle. The ends are blank. 140×15×16 mm. Pl. 31:8.

K. 13401:2. Fragmentary net-work of twisted hemp(?)thread, 0.9—1.2 mm. thick. Side of mesh 4.5 cm. Ordinary knot.

K. 13401:3. Fragm. of woven shoe, torn all round. Coarse weave of hair, brown and grey, brittle. Warp: th. 1.5—2 mm., 6 threads to 2 cm. Weft: th. 1—1.5 mm. 20 threads to 2 cm. L. about 16 cm. W. about 7 cm.

K. 13401:4. Bunch of black feathers with the butts cut off.

Ruined house 3 km. ENE of the ruin that contained the finds K. 13401.

K. 13404. Bronze dress-hook of uniform thickness, clumsy. Nearly round section. L. 118 mm. Pl. 30:7.

The ruined fort T'u-ken. 26/2—31.

K. 13430:1. Fragm. of bronze tube with globular knob; mounting for the end of a canopy rib of wood. Below the knob a raised ribbon with elevated middle line. Present L. 37 mm. Pl. 30:5.

K. 13430:2. Fragm. of iron knife. The upper part of the handle shaped into an oval ring. Very rusty. Present L. 121 mm. Pl. 30:10.

Ruin I. (No. 33).

Very near the head of Qum-darya's delta SVEN HEDIN's party discovered a ruined house on May 5th 1934. It was situated on the left side of the river, 210 m. from the shore on a 2 m. high terrace.[1] The ground plan shows a rectangle lying ENE—WSW about 12.5×7 m., containing four rooms, and with an enclosure or yard about 13×15 m. at the south-western end.

The walls of the house were marked by eighteen standing posts, among these the jambs of two doors. Between there had been a wattle of tamarisk branches and reeds filled out with plastered-on clay. The lowest part of this wattle was preserved, showing that the tamarisk branches were arranged vertically. In a corner there was a fireplace with traces of charcoal. In the NW room there were some sheep droppings, probably from a time when the house had been abandoned by the last proper occupants. STEIN has also observed that one of the Lou-lan ruins (the once beautifully decorated residence L. B. IV) had served as shelter for the flocks of shepherds for a considerable number of years.

[1] It is not marked on the map Fig. 37 but it must be situated in the neighbourhood of 401.

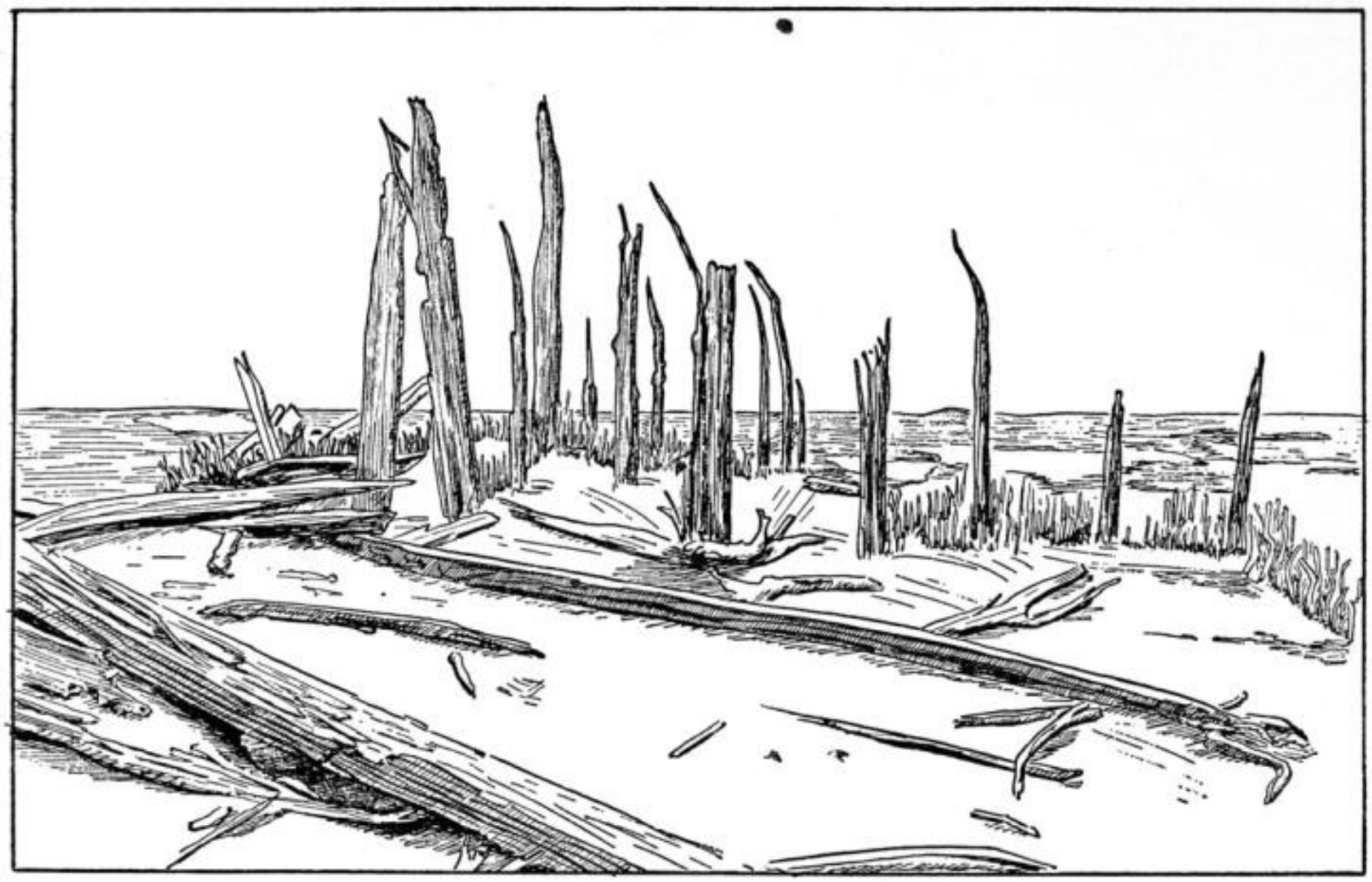


Fig. 34. Ruined house on N. shore of Qum-darya, from WSW. Drawing from a photo by Mr. Chen.

Besides the drawing Fig. 34, made after a photograph by Mr. CHEN, I refer to the drawings by Dr. HEDIN in his popular narrative "Den vandrande sjön" pp. 95—97.

As is the case with most ruins in Central Asia the surroundings of this one was also strewn with potsherds. They were of a well-burnt thick ware, in colour ranging from red-brown to blue-grey and grey. The sherds brought home come from rather large jars, most of them with a marked rim, Fig. 35: 1, 3, 6—8 and 10.

The iron knife Pl. 25: 12 was found in the house as well as the fragmentary signet ring Pl. 27: 9 (of bitumen?), two fragments of an iron cauldron, a rectangular piece of red-brown woollen material, the flat bottom of a large oval basket, and the rim of another basket, Pl. 18: 7, probably of the same type as No. 37: 2. The heavy wooden "comb" Pl. 27: 12 is a weaving instrument, used to press down the threads. STEIN has found two similar specimens at Niya (Stein 1907, Pl. LXXIII and 1921, Pl. XXVIII), and he also refers to the fact that such an implement is seen in the hand of a weaving lady on a painting from Dandan-öilik (Stein 1907, Pl. LXIII). In Egypt they are said to appear from late Roman time and onwards (Petrie, LXV: 148). The bone comb with long curved handle from the Minusinsk region (Teploukhov, Pl. 1: 71)[1] might possibly be an instrument for the same pur-

[1] A larger picture in L'Antropologie 39 (1929) p. 422.

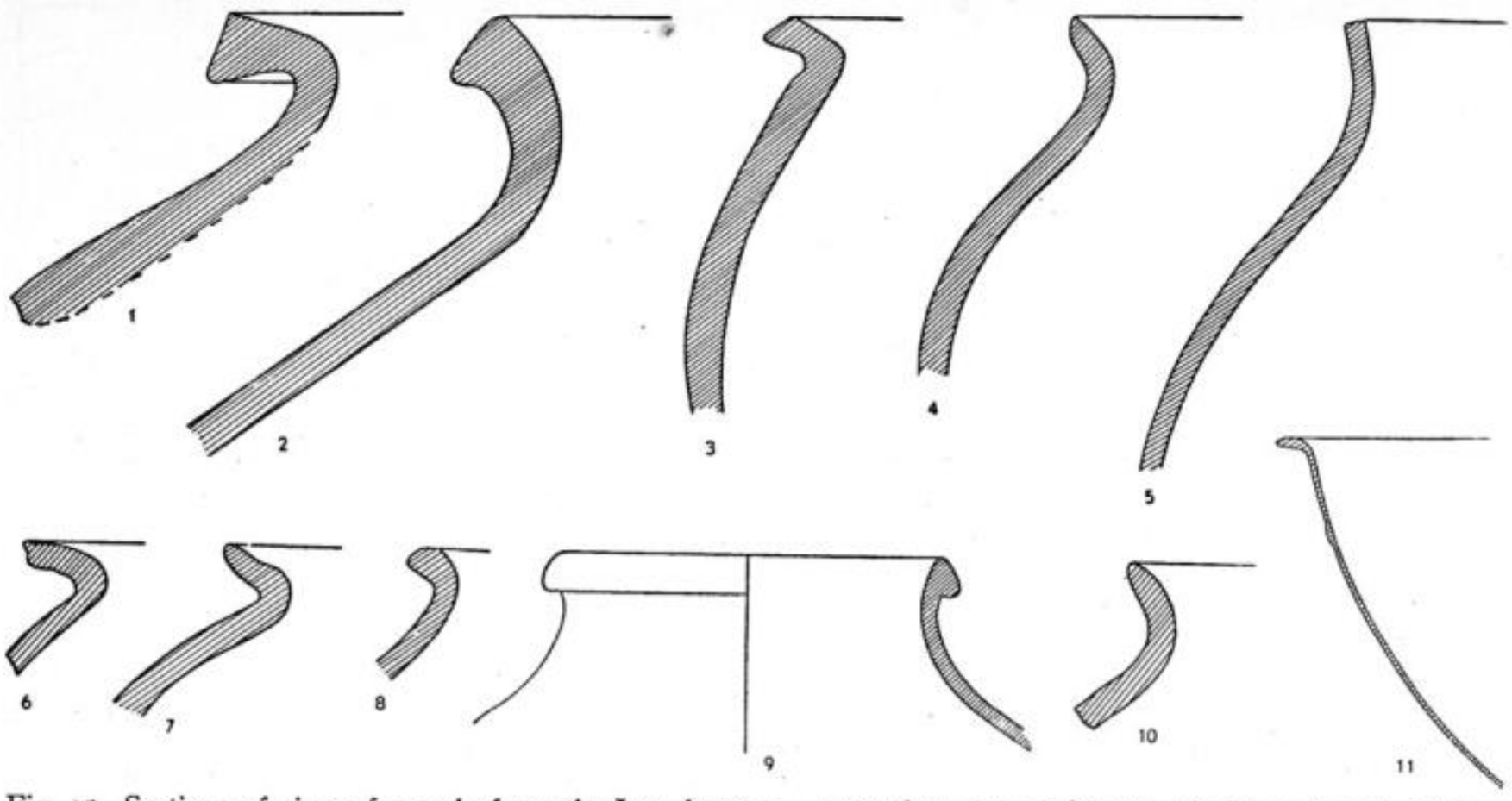


Fig. 35. Sections of rims of vessels from the Lop desert. 1—10 earthenware, 11 bronze. 1) 33:1. 2) 9:7. 3) 33:4. 4) 16:1. 5) 18:1. 6) 33:9. 7) 33:7. 8) 33:13. 9) 7.C:1. 10) 33:15. 11) K.13382. All 1/3.

pose. It is grouped together with the Kurghan I culture, dated somewhat previous to B. C. 500.

All the objects enumerated were collected from the surface of the ground in and around the ruined house. Like the two ruined houses found by Mr. CHEN in this same region it awaits future excavation.

LIST OF ANTIQUITIES FROM RUIN I.

33:1-15. Fifteen potsherds from the rim of thirteen or fourteen vessels, mainly large ones, with rather short neck and projecting rim. Hard-burnt ware, the colours ranging from reddish-brown to grey. —:1 Fig. 35:1, —:4 Fig. 35:3, —:7 Fig. 35:7, —:9 Fig. 35:6, —:13 Fig. 35:8, —:15 Fig. 35:10.

33:16. Potsherd from the rim of a vessel with slightly marked neck and decorated with a coarse incised zig-zag line on the shoulder. Reddish-brown ware like the preceding ones.

33:17. Lug from big earthenware vessel, 62 mm. broad, projecting 40 mm. from wall of vessel.

33:18. Potsherd from the flat bottom of a large bulky vessel. The ware is blue-grey on the outer surface, reddish-brown within.

33:19. Iron knife with slightly convex back. L. 15 cm. Pl. 25:12.

33:20-21. Two fragm. of an iron cauldron, one of which has two raised mouldings.

33:22. Heavy wooden comb for pressing down threads in weaving. The lower edge wedge-shaped, the short blunt teeth being at the thin end. The upper part rounded to a shape to fit into the palm of the hand, and furnished with a projecting knob. The edges slightly fragmentary. L. 155 mm. Br. 77 mm. Th. 35 mm. Pl. 27:12.

33:23. Fragm. of signet ring of black material, resembling bitumen. Very little remains of the impressed bezel. Pl. 27:9.

33:24. Rectangular piece of dark reddish-brown, tight warp rep of fine wool. The yarn firmly spun, similar in warp and weft, th. 0.6 mm. The warp 250 threads to 10 cm., the weft 90 to 10 cm. Selvages at the short sides, folds at the long sides. Full width of fabric = L. of piece, 20 cm. W. 8.7 cm. Stitches of bright rose-

coloured wool in the folds show that the piece has been joined to some other material.

33:25. Flat bottom of large oval basket, coiled with interlocking stitches on a coarse single-rod foundation. 74×36 cm.

33:26. Fragm. of rim of large basket, probably a tray-basket of the same kind as No. 37:2. (Pl. 18:7).

D. DISCUSSION.

The distribution of ruins, cemeteries and stray finds clearly shows that the settlements have been limited to the western side of the large salt crust between the glacis of the foot hills of Quruq-tagh and the northern marshes of Qara-qoshun. We have thus to deal with a delta-settlement. If we take into account only the remains of buildings and graves we can distinguish three groups. The first one is centred around the present complicated delta of Qum-darya, and is no doubt the most important of the groups, containing many ruins and the main part of the graves.

The second group consists of STEIN's ruins L. K., L. L., L. M. and L. R., situated to the south and near the northern shore of the Qara-qoshun. These settlements have probably drawn their water supply from one and the same river branch, apparently the southernmost delta branch in the time of Lou-lan. Prof. HERRMANN's construction of a "River of the South", passing through the middle of the Taklamakan, the fortress of Merdek and the ruins just mentioned, seems too much out of touch with realities. In his last work he has also queried it on on the map. (Herrmann 1938, Taf. VIII).

So far, no graves have been discovered belonging to this second group of ruins.

The third group is formed by the graves discovered in the western part of the Lop desert along The Small River. There the water has returned and is now following a single bed, which must be practically identical with the old course. This region is more protected against wind erosion than the more easterly parts of the desert, thanks to its cover of sand dunes. At the time of Lou-lan this region was covered by less sand, but with the passing of the centuries more and more drift sand has accumulated.

Future researches will of course increase the number of ancient remains — even in the areas between these three groups — and quite new centres may come to light. In the main, however, I believe that the differentiation as given above will remain.

The first group forms the centre of the whole Lou-lan settlement, and this fact alone makes it evident that the then delta must have watered this region. It is remarkable, though, that the Lou-lan station, which during at least the latter part of the occupation was the centre, is the southernmost ruin so far known in this group.

The total absence of structural remains between the Lou-lan station and the southern group of ruins is worthy of special attention. On this stretch of 45 km.

separating the Lou-lan station and the fort L. K. one would expect some sort of signal-towers as the important road to Miran must have run here. The region is not untouched by man, because stray finds both of stones and metal do occur here, but the water supply was most likely insufficient to sustain any permanent settlements or allow any construction of watch-towers.

A little to the east of this line lies the route along which Dr. HEDIN carried out his levelling from the Lou-lan station to Qara-qoshun, and where he discovered a flat depression, which he identified with the bottom of the lake Lop-nor of Lou-lan's time. The extension of this basin is too limited to have been the only lake, and it was hardly inundated at the time of Lou-lan as HÖRNER's finds K. 13356—8 are made in the deepest part of it. We can therefore hardly count with the presence of a lake here as an explanation of the absence of ruins.

As seen from the above the ancient settlements in the Lop desert are not limited to any special still traceable shore-line but have been grouped along the river branches of a delta. This kind of settlement has many parallels among the present-day oases of Eastern Turkistan. The same kind of settlement existed in the Han and the Sung-Yüan periods at lower Edsen-gol.

Taking the known ruins as a starting point one can thus, to a certain degree, reconstruct some features of the configuration of the Tarim delta at the time of Lou-lan. Thanks to the surveys carried out by STEIN and HÖRNER certain parts of ancient river beds have been put on record. In many cases it is very hard to determine the location of the old river courses as the ground is so strongly wind-eroded. Only some trifling spots of the actual land surface of the Lou-lan time now remain. All the rest has been ground off by the violent force of the north-eastern winds. STEIN's criteria of ancient river beds, i. e. long depressions lined by rows of trees, are not conclusive in all instances. Some of his river beds as shown on his map (Sheet B) can hardly be proved until more extensive surveys have been made.

When surveying the area immediately to the south of Qum-darya, between the height of Yardang-bulaq and The Small River, I encountered several features, which at first sight seemed to be old river beds. They consisted of river-like depressions, 8—10 m. deep and 50—100 m. wide, and the edges were bordered by groves of dead poplars and tamarisks. But they were anything but old river courses. Closer study proved them to be oblong, but closed, depressions, i. e. wind-hollows of very considerable dimensions.

In some instances the bottom contained moist, black clay and even water of the utmost salinity, Pl. V b.

If I had only crossed these depressions at right angles, without studying their extensions, the river-like appearance would certainly have led me to mark them on my map as old river beds.

The distribution of ruined dwelling sites does not necessarily mean that all of them were within reach of water at one and the same time. It is very probable that they

are not quite contemporaneous. The houses along one delta arm might have been deserted because of insufficient water supply at a time when houses along another delta arm were inhabited. Such minor changes inside the delta are impossible to prove with naked facts just now, but they certainly took place. Around 260 A. D., for instance, the region around the Lou-lan station was apparently best suited to the requirements of an agricultural military station, and thus selected for the foundation of the base camp. It may have been the administrative centre even before that time.

6. STRAY FINDS FROM THE LOP DESERT.

The most interesting Lop-nor finds are those recovered from the tombs, but also the small finds picked up from the ground in many different parts of the region are important inasmuch as they furnish valuable information about the distribution of land and water, settlements, roads and so forth in ancient days. As to the origin of the stray finds we are left in uncertainty. In some cases they probably come from destroyed tombs, in others they may have been picked up from dwelling sites where the structural remains are not to be recognized (i. e. 'tati'-finds) and finally, they may have been dropped by travellers in ancient time.

Evidently the stray finds cannot all be contemporaneous but none of those which can be dated is younger than the known end of the Lou-lan occupation.

When HÖRNER and CHEN, in the winter season 1930—31, made their survey of the new lake Lop-nor and the delta of Qum-darya, they also found time to collect archaeological objects as already mentioned. The major part of these consists of loose finds from the eroded clay surface of the ground. In the descriptive list all the articles are mentioned; here only the more important will be treated. On the map Fig. 37 only those finds have been plotted which can be localized to a fixed spot. The inventory numbers of the objects are used also on the maps, though long numbers, e. g. K. 13396 have been shortened to the three last numerals: 396.

In the summer of 1934, Mr. CHEN also collected a certain number of small objects in the delta region. They will be treated in this chapter as well as a few articles found by NORIN. The small finds collected by me and my men in 1934, in a more westerly region than the above (south of Yardang-bulaq and along The Small River) will also be mentioned here.

Coins.

The Wu-ch'u is the most predominating issue. Of the normal type there are 89 pieces, many of them having a small elevation on the middle of the inner rim at its lowest part, Pl. 30: 8.

Two samples, not illustrated here, have special marks: short ridges radiating from the corners of the hole on the reverse K. 13379: 11, and a "nailmark" on the obverse K. 13421: 1.

The cash strings Pl. 31: 1 consist, as far as can be judged, of the ordinary Wu-ch'u coin. Nos. 26: 1—5 are covered with thick incrustations, but the size is that of the normal Wu-ch'u.

There are two samples of a coin of Wu-ch'u type lacking the outer rim, and five debased Wu-ch'u such as Pl. 28: 28—29, and one clipped Pl. 30: 9, making in all 245 Wu-ch'u coins.

Besides these there are only two "Goose-eyes" and some trifling fragments.

We may be quite sure that what I have called the normal Wu-ch'u is a true Han issue. The chronological limits for Wu-ch'u given in numismatic works are 118 B. C. —581 A. D., but at the end of the Han dynasty the Wu-ch'u currency was rapidly debased, as is clearly visible on the specimens from here. They became smaller and of much inferior make. If the Wu-ch'u were revived again it is hardly likely that they were minted exactly after the same pattern as in the beginning of their use. Both through STEIN's finds and my own from well dated strata we have now a fair number of undeniable Han Wu-ch'u, and the Lop-nor specimens referred to as normal Wu-ch'u are of exactly the same shape and size.

Among these finds of the then current money there are especially two which are worth consideration; they were made very near each other at the northernmost part of the delta, at HÖRNER's camp 106 (marked 420 on the map Fig. 37). The first find bears the number K. 13421 and consists of 63 Wu-ch'u coins which were lying scattered along an area of 30 m. in length and 1 m. in breadth. Some of them are very thin from wind erosion.

On the occasion of Mr. CHEN's second visit to this spot three years later still another heap of coins was found there, No. 41: 1—13.

The other find, K. 13423, depicted on Pl. 31: 1, is a partly preserved cash string consisting of single coins or lumps of up to twenty coins adhering to one another through the thick, hard incrustations. The latter are caused by moisture. The most predominating colour is not, however, green but the dark brown of the desert patina.

These two finds of money current during the Lou-lan occupation in nearly the same place show that this region immediately to the north of the present delta was of special importance, and probably saw much traffic. Other bronze objects, too, that have been found there point in the same direction.

The Chinese coins have certainly been minted in China proper, possibly with the exception of some simple types such as the "Goose-eyes". It is impossible to give true statistics of the coins from the Lop-nor region, only that more than one thousand have been found, and that the majority consists of Wu-ch'u.

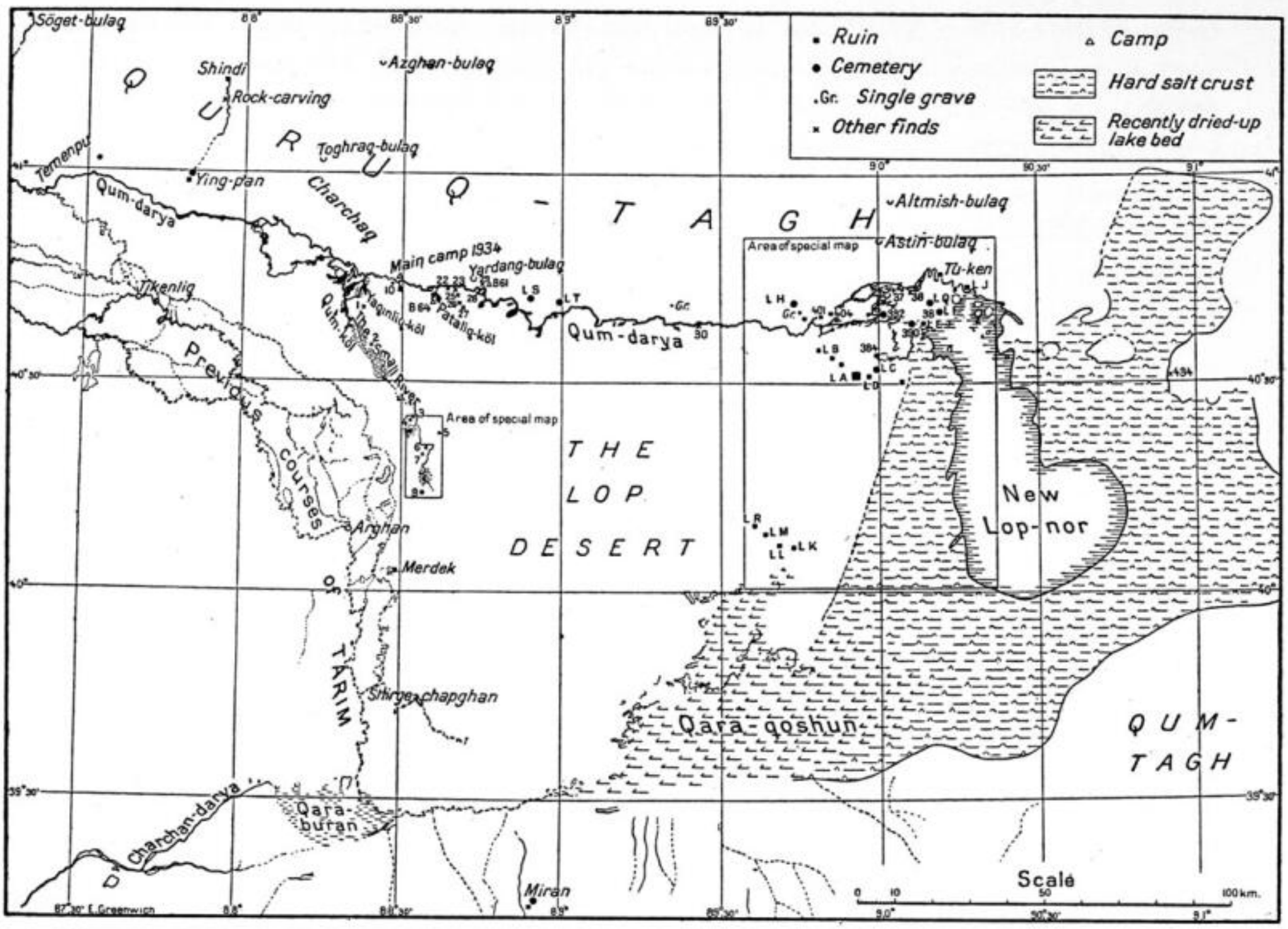


Fig. 36. The Lop-nor region. Preliminary map compiled from the surveys of HEDIN, HÖRNER, CHEN, NORIN and BERGMAN. (The two special maps referred to are Figs. 18 and 37).

Weapons.

Of true weapons very little is found in the Central Asian fortifications of ancient times. When the garrisons left they took their weapons along with them, or when an aggressor was successful he took possession of the weapons of the conquered and carried them away with him. What is left to us are only broken fragments or accidentally lost objects, and some arrow-heads, the latter corresponding to spent "ammunition".

The best object found by HÖRNER and CHEN is the cross-bow mechanism Pl. 29: 18. It is of the ordinary type used in the Han period, quite plain, but in good order. HEDIN found the trigger of a similar mechanism, Pl. 31: 7, and STEIN has a bolt with square head from the Lou-lan station (Stein 1921, Pl. XXXVI, L. A. II. v. 002), though he did not recognize its use as a bolt of a cross-bow mechanism.

The cross-bow is an infantry weapon of defensive nature, and was apparently invented by the Chinese. It was in use as early as B. C. 228 as a cross-bow lock was

found in the tomb of YU WANG at Shouchou dating from that year (Karlbeck 1938, p. 36). It probably existed long before that, though we lack definite proofs (Wilbur, p. 428 f.).

The four bronze arrow-heads Pl. 30: 12—15, all with triangular section and of well-known Han types, are cross-bow points. The two larger specimens, Pl. 30: 12 and 15, have unusually blunt tips.

The iron arrow-point Pl. 30: 16, of the three-winged tanged type, has been used with an ordinary bow, and so has the three-winged, socketed bronze point No. 44: 2, which is of the same type as Bergman 1935c Pl. X: 2. It was found somewhere along the northern side of the delta.

The bow is an offensive weapon, and especially the composite bow invented by the Central Asian horse nomads was highly effective.

Of the cross-bows we know only the mechanism and the stock (a complete Han specimen excavated at Lo-lang in Korea, Oba and Kayamoto 1935, Pl. 82) but we are still ignorant as to the appearance of the cross-bow bow, which must have been of the composite type.

K. 13368: 33 is a fragmentary and much corroded dagger blade (or spear head) of iron, about 15 cm. long.

It is possible that the bronze tube Pl. 31: 10 has served as the socket of the lower end of a *Ko*-handle. I found it together with five coins of Wu-ch'u type to the south of Qum-darya a little above Yardang-bulaq (at point 26 on the map Fig. 36). I found a quite similar socket together with Han objects at Edsen-gol in Mongolia.

The leaf-shaped bronze plate Pl. 29: 7 is of unknown use. It is not absolutely out of the question, though, that it has been riveted to a coat of mail. LAUFER depicts similarly shaped armour plates (Laufer 1914, Fig. 34), but they appear to have several perforations and ours has only one.

Knives.

The three bronze knives Pl. 30: 22, Pl. 31: 2 and 12 may be of non-Chinese origin, as they closely correspond to the nomad style knives (Ordos and Siberia). The long one, of uniform breadth, Pl. 31: 2, has close parallels among the Minusinsk knives (Martin 1893, Pl. 20: 28 and Merhart 1926, Taf. IV/V: 2), and in MFEA there are three iron knives of this primitive shape which were found in graves at Belotsarsk on the Yenisei (K. 4089: 3).

The blade of Pl. 31: 12 is slightly curved and only 7.5 cm. long. This knife could as well have been found in the Minusinsk region or in the Sino-Mongolian border land.

Pl. 30: 22, only the blade, is of the slightly curved type with concave cutting edge.

Mirrors.

Three fragments from one and the same bronze mirror are seen on Pl. 30: 20. This mirror is of "the hundred nipples, stars and clouds" type, which first appears in the earlier Han dynasty.

Two small fragments from the thickened rim of mirrors (K. 13379: 14 and K. 13409) may be of about the same date as the one first mentioned — at least they cannot be older. One has the border decorated with a double "saw tooth" pattern like Pl. 28: 1, though smaller.

STEIN collected three complete and twenty-six fragmentary bronze mirrors in the Lop-nor region. Eleven of the total number come from the Lou-lan station. Among his reproductions there are for instance three TLV-mirrors, one with "four animal design", two or three of the same type as our Pl. 28: 2 and one with a lapidary inscription with eight characters reading: "When you see the light of the sun the world is very bright" quite a common sentence on inscribed mirrors.[1] A study of the originals might reveal more types. Those mentioned above were common in the Han dynasty. Most of them seem to be small, and as far as can be judged from the illustrations they are of about the same quality as ours. These relics acquire antiquarian interest from the fact that they are no doubt importations from China proper. The fragment No. 8: 3 seems to be from a small, plain mirror, which may be of local make.

Girdle and strap fittings.

The bronze buckle Pl. 30: 1 was found by HÖRNER in the southern part of the Lop desert. I have reproduced it once before (BMFEA 7 Fig. 7) and labelled it as belonging to the nomad style bronzes. The hook projecting from the front part of the rim is large, but curiously enough turned "inwards" instead of "outwards" as in ordinary cases. This shape might be partly due to wear; because of the thick verdigris it is impossible to get any definite impression of possible damage. There are

[1] It is rather interesting to find that a small Chinese bronze mirror which has been excavated from a South Russian barrow is of the same type as this Lou-lan mirror and carries the same inscription (Ebert's Reallexikon 13, Taf. 40 C, and Stein 1928, Pl. XXIV, L. C. 013). A certain number of Chinese jade objects (fittings for sword sheaths) also reached Sarmatian South Russia (Ebert's Reallex. 13, Taf. 40 D f). Besides Chinese silk stuffs found in a Crimean tomb not posterior to the first century A. D. and the Chinese silks excavated in Palmyra from tombs not posterior to the third century we know of a couple of most interesting cases of Chinese exports from the time of the existence of Lou-lan. In the Dane John at Canterbury, England, a bronze vessel of the type *Hu* with Huai style decoration has been dug up (Ashton & Gray, Pl. 14) and another Huai style *Hu* was found in Rome (Vessberg in BMFEA 9). Both are good specimens and real pieces of art, and their presence in Europe at the beginning of our era goes to prove that the Chinese exported not only silk stuffs but also other art products, such as were in demand e. g. by the Romans. Some finds of Chinese wares in graves dating from the Roman time are said to have been made long ago in the region of the Rhine. None of the objects is preserved, and it is doubtful if we have here to deal with an ancient import of Chinese goods. A pottery vase depicted in Bonner Jahrbücher XV (1850) Taf. III: 1 cannot be of such a great age. LAUFER has drawn attention to several of these ancient but uncertain finds (Globus July 20th 1905; reviewed in TP 1905, pp. 511 f).

close parallels to this buckle, except the wrongly turned hook, from Minusinsk (Martin 1893, Pl. 31:20 and Tallgren 1917, Pl. XI:43, especially the former one).

A true representative of the Ordos and kindred bronze cultures is the fragmentary plaque or buckle Pl. 30:4, which was found by NORIN at point 416 on the map Fig. 37, viz. not very far to the north of the northernmost branch of the present delta. Unfortunately only the front part is preserved and only the rim of the central part where the main decorative element must have been placed. The nippled buttons in the corners are, however, typical of the Ordos bronze art, and so is the projecting hook for fastening the strap end.

The occurrence here of objects showing affinities with the Ordos bronzes might possibly be regarded as a proof of intercourse between the Lou-lan people and the Huns, as the Huns are said by several authorities to have been the carriers of the Ordos bronze art and we have, moreover, literary evidences of connections between these two peoples. It is, however, by no means certain that the Huns were the sole carriers of this art.

Pl. 30:2—3 are two identical buckles of the "ordinary" construction with a tongue, in these cases hinged to the central bar running across the oval frame. Besides the two specimens in this collection I know of six others of exactly the same shape: Stein 1921, Pl. XXXVI, L. A. 0013, and Pl. LIII, T. VII. 001; K. 13470:165—166 and K. 11003:1565 of the MFEA in Stockholm, and finally one specimen found by me at Edsen-gol. Five of these have been recovered scientifically and can be proved to be af Han date. A slightly different variation of this type has one edge straight. I know of three specimens in the MFEA: K. 13483:9 (from STEIN's tower XLIIe in the Tun-huang *limes),* and K. 11003:732A and 1566 (both bought in Kuei-hua). Both of these two variations seem to be of the Han and immediate post-Han periods, and they probably formed part of the soldier's outfits.

The strap end of bronze Pl. 30:23 has close parallels among the early migration age types. The same construction with a freely hanging tongue is found on a silver fitting from a grave near Stalingrad on the Volga from about the fourth century, probably Sarmatian-Gothic (ESA 1, p. 37). A similar ornamentation is seen on a girdle fitting on a painted figure from Kucha (Grünwedel 1912, Fig. 56). The bevelling somewhat recalls the treatment of associated strap ends from the Isle of Gotland (4th—7th century).

Various metal objects.

NORIN found a complete armlet, Pl. 30:24, the flattened ends of which are decorated with some coarse lines, probably meant to represent snake heads.

A fragmentary finger ring Pl. 31:6 may come from the Lou-lan station, but the place of finding has not been definitely verified. In Dr. HEDIN's old collection there is a similar one (Bergman 1935c, Pl. XI:12) and STEIN has found several

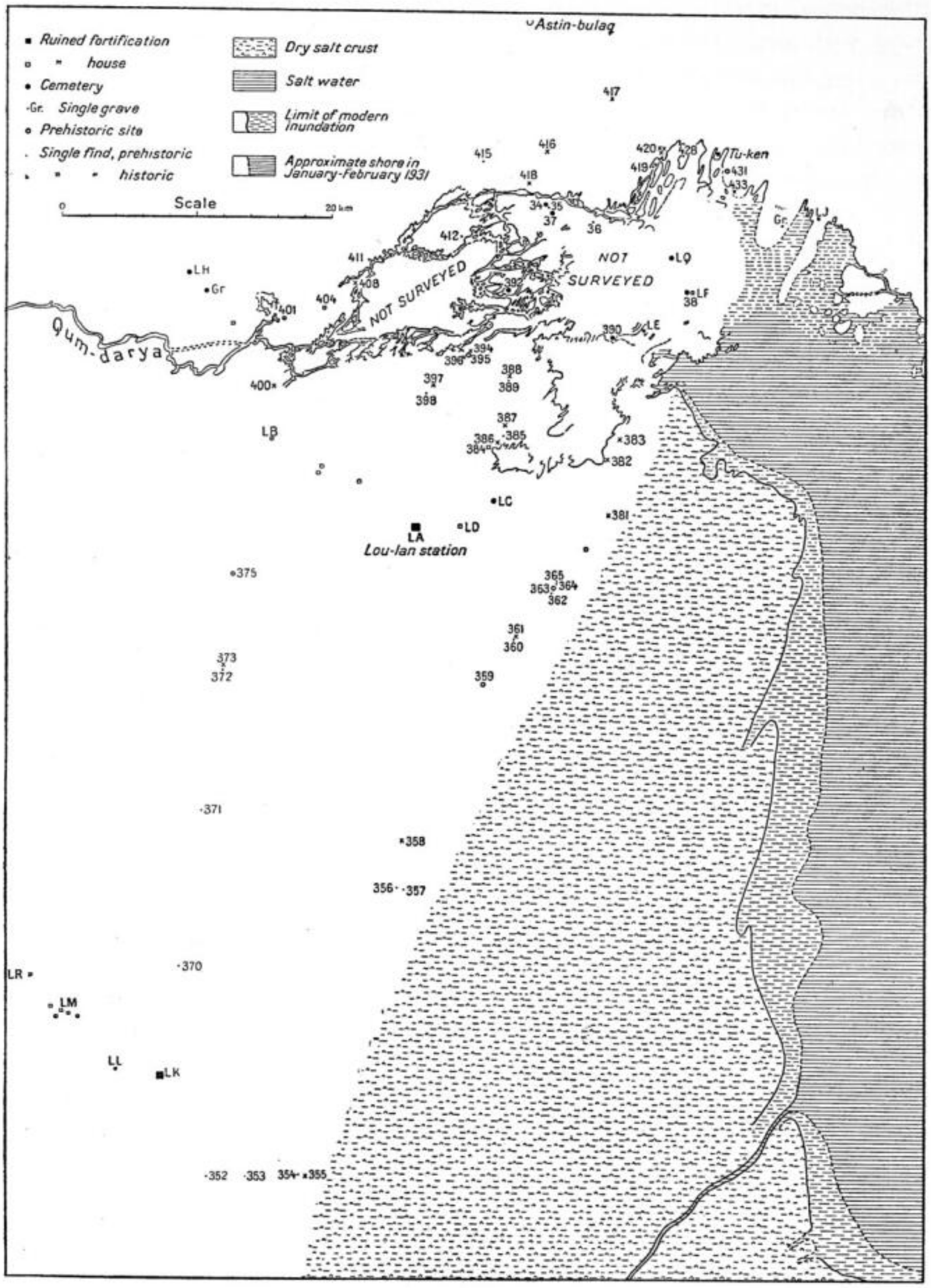


Fig. 37. The present delta of Qum-darya and the western part of Lop-nor, with archaeological remains. (Ruins and cemeteries found by STEIN are also plotted). From the surveys of HÖRNER and CHEN. One or two-figure numbers correspond to the inventory numbers in the lists. To three-figure numbers K. 13 must be added to get the inventory number.

of this sort of rings with incised linear designs on the oval bezel, probably used as signets, both at the Lou-lan station and at Niya. Their appearance is non-Chinese. Finger rings in general are rare in China until much later periods.

Other round or square "rings" such as Pl. 30: 21 and 30: 26 have probably been fastened to straps or ropes. The square specimen may have been a buckle.

A hemispherical boss with a central pin, Pl. 30: 25, is one of the supports of some case or vessel, probably of wood. Many objects of this kind are known from the Lop-nor region, but this one is pretty large. STEIN found a rectangular basket with such bosses as supports (Stein 1928, Pl. XXV, L. M. 1. 01—4). On lacquer boxes from tombs at Lo-lang in Korea there are in some cases similar bosses on the lids.

Four identical specimens of the hooked tube Pl. 30: 6 were found together with the fine arrow-head Pl. 30: 15 above the high shore cliff to the east of the ancient lake Lop-nor; the spot is marked 434 on the map Fig. 36. They are in fact the only objects in this collection that have been found in this region, and they have most likely been lost there by travellers. The four bronze tubes or sockets are of special interest. The function of these hooked tubes has until recently been obscure — as a rule they have been associated with arrows — which of course is absurd, as they are unsymmetrical. Finds in the tombs at Noyan-ola show that they have been fixed to the ends of wooden canopy ribs, the hooks having served to fasten the cover of cloth or hide. In the case of Noyan-ola it has apparently been an umbrella or canopy of such chariots as are depicted on the famous Shantung tomb reliefs. We cannot be absolutely sure that all tubes of this kind were used on chariot canopies or "umbrellas" — there were probably other kinds of "umbrellas" with such fittings — but if our tubes belonged to a chariot it is not unlikely that this had to be abandoned at the place where the bronze tubes were found. In any case the finding place of these objects is worth particular consideration. It lies about 40 km. from the present shore of the lake, and about 83 km. due east of the Lou-lan station. The position becomes of the utmost importance when we find that it lies in a straight line from the south-western promontory of the Pei-shan ridges and the easternmost outpost of the Lou-lan ruins, i. e. that of STEIN's tower L. J. It therefore seems likely that a direct road existed straight across the salt-crust, which according to HÖRNER's surveys seems to have a much more limited expanse here than is shown on STEIN's maps, and there were apparently several "islands" of better ground in the salt-crust. It is doubtful whether the more northerly route found by STEIN was easier to negotiate than this direct one, and it was at least 30 km. longer; but it was less liable to inundation.

Another fragmentary tube with lost hook, Pl. 30: 5, has been mentioned already in connection with the ruins of T'u-ken.

A small bronze scoop Pl. 30: 18 has an exact parallel in Dr. HEDIN's old collection from Khotan. It has just been published by MONTELL (1938, Pl. IV: 13), and he supposes that it has had some function in Buddhist ritual. Otherwise there are no

Buddhistic objects in our collection, with the exception of the stupa ornament Pl. 29:6 from Lou-lan. Similarly shaped scoops, though probably larger, are known inter alia from the Scythian royal tomb of Solokha in South Russia (about 300 B. C.) Ebert's Reallexikon 12, Pl. 85 a.

Some of the small bronze fragments come from vessels, but only one is from the rim of a basin (K. 13382) Fig. 35:11, which can be compared with one of HEDIN's old finds from the region immediately to the north of the present delta (Hedin 1905, p. 64).

There are several small perforated discs of lead, which have probably served as net sinkers, Pl. 30:19 and 31:3. They are well-known from earlier collections from Lop-nor. A larger piece is shown on Pl. 29:17.

Stone objects, etc.

The whetstones are more or less rectangular and have usually a suspension hole at one end; at least such small specimens as Pl. 29:16 and 19 and Pl. 31:11 have been carried at the girdle.

Spindle whorls are quite common, as already stated, and made of stone, potsherds or bitumen, Pl. 29:3 and 31:4. From the graves we know of wooden ones.

A flat ring of white marble, Pl. 29:10, is of the type *Pi,* the Chinese symbol of heaven. This type existed in China proper as early as in late neolithic times, but this specimen is more likely from the Lou-lan period when Chinese influence was strong in this region. It is strongly worn by sand on one side, and the outer rim has been ground off on about one half of the circumference so that the diam. varies from 84 to 81 mm. The rim of the hole is also worn mostly on the half opposite to the worn portion of the outer rim. The ring must thus have been lying exposed to pretty constant winds for a considerable time.

Another marble object is the cylindrical bead Pl. 29:11. Similar beads were found in the Sha-kou-t'un cave (Andersson 1923, Pl. VIII:13). There is thus a possibility that our bead dates from prehistoric time. The two fragmentary mace-heads Pl. 29:9 and 12 have already been treated.

Pottery.

Among the stray finds there are only few potsherds, not that they are uncommon in the field — on the contrary — but as they are often plain and undecorated they have not been collected so eagerly as stone and metal objects.

Most if not all of the Lou-lan pottery was manufactured locally. Both STEIN and HÖRNER have found pottery kilns.

The ware is hard-burnt and of dark-brown, red and greyish colour. The most common shape is the bulky jar. The rim is more or less strongly moulded (cf. Fig.

35:4—5) and the bottom is flat. As there are only fragments the size of the vessels cannot be determined, but most of them were middle-sized, only a few of them were large. No. 17:1 is a fragment from a wide pot with a stout, tubular spout near the rim.

In addition to the places which have been marked on the map HÖRNER noticed potsherds in many places: 3 km. SE of 400; 2 km. S of 404; 1 km. SE of 404; around L. A.; between L. A. and 365 in three places; around 387 and the kiln site 384; between 384 and L. C.; between 363 and 361 in four places, one of which lies close to 361 and also had some flints; between 360 and 359 pottery and worked flints in three localities; between 359 and 358 flints or pottery in six places; between 358 and 356 coarse potsherds; in the delta about 5 km. NE of 392 and 2.5 km. WNW of 390.

Conclusion.

It is a matter of course that the stray finds are distributed over a larger area than are the ruins and the tombs. Attention has already been drawn to the bronze objects found together on the eastern side of the salt crust above the shore cliff of the prehistoric Lop-nor (434 on the map Fig. 36). There are also some finds on the western border of the salt crust quite close to it. The existence of HÖRNER's ruined house due east of Lou-lan station is a proof that it was possible to live quite near the edge of the salt in the time of Lou-lan.

The finds 356—8 on the map Fig. 37 are worthy of attention as they are situated in the middle of the depression which HEDIN found to the south of Lou-lan station, and which he supposed to mark the site of the Lop lake at the time of Lou-lan. These finds indicate that a lake could hardly have existed here at the time in question.

The concentration of finds around HÖRNER's camp 106 at the northernmost part of the present delta, marked 420 on the map Fig. 37, is so obvious that we may suppose an important centre here. Nos. 41 and K. 13419—27 originate from here, altogether more than one hundred objects, mostly of bronze and of a good quality (i. e. good for the Lop-nor region). As suggested in the section on the roads, the Silk Road must have passed here, and the many coins may have been dropped by travellers on the road. The possibility of an undiscovered or totally decayed ruin here must also be reckoned with. The neighbourhood of T'u-ken deserves attention.

DESCRIPTIVE LIST OF SCATTERED FINDS

Yaqinliq-köl.

1:1. Potsherd from rim of vessel with wide mouth, brownish to grey ware.

1:2-3. Two small potsherds, red-brown and grey ware.

1:4. Fragm. of small oval iron ring, probably from a buckle.

1:5. Small bronze knife of nearly uniform breadth. 70×13 mm. Pl. 30:11.

Qum-köl.

2:1. Polished axe of light-green jade, unusually large. The cutting edge somewhat convex. Only part of one narrow-side is polished. 185×95×24 mm. Pl. 5:16.

About 700 m. NNE of Cemetery 4.

3:1. Four fragm. of a bronze hair-pin. U-bent wire thickened at bend.

Scattered finds collected by Ördek S of Qum-darya, probably along "The Small River".

8:1. Nearly spherical bead of light-red carnelian. Diam. 12 mm. Pl. 15:11.

8:2. Drop-shaped carnelian bead. L. 16 mm. Diam. 8—6 mm. Pl. 15:10.

8:3. Nearly half of a small bronze mirror covered with thick verdigris. Rather thin. The edge slightly thickened. Diam. about 6 cm.

About 35—40 li S of camp B 64 at Pataliq-köl, a lake on the right shore of Qum-darya.

11:1. Two joined potsherds from the rim of a large vessel of rather thin red ware, grey inside. The slightly concave collar is decorated with slanting lines arranged in alternating rows, thus forming a kind of zig-zag pattern. Pl. 29:2.

11:2-8. Seven potsherds, apparently of the same vessel as —:1. Two of them decorated in the same way.

About 40 li S of camp B 64.

12:1. Three joined potsherds from the rim of a vessel with slightly projecting rim. Brownish ware intermixed with coarse-grained sand.

12:2. Potsherd of the same vessel as —:1.

Unspecified locality amongst the sand dunes S of Qum-darya, SE or E of camp B 64.

13:1. Three joined potsherds from the lower part of a very large vessel of thick, reddish-brown ware, hard-burnt and intermixed with sand. The bottom has been flat.

13:2. Sherd, probably from the same vessel as —:1.

Unspecified localities amongst the sand dunes S of Qum-darya, probably S or SE of camp B 64.

14:1. Flat spindle whorl of bitumen. Diam. 43 mm. Th. 7 mm. Pl. 31:4.

15:1. Flake of grey flintlike stone with worn edges. 55×12 mm.

16:1. Three joined potsherds from the rim of a bulky vessel with short neck. Hard-burnt ware, brownish-red to blue-black intermixed with grains of sand. Fig. 35:4.

16:2. Two joined sherds from lower part of the same vessel as —:1.

16:3. Sherd from the same vessel as —:1.

17:1. Potsherd from the rim of a squat pot with a short, thick tubular spout. Red, hard-burnt ware intermixed with grains of sand.

18:1-6. Six potsherds, most likely all from one vessel, rather large with slightly marked neck. Reddish-brown brick-like ware, slightly weathered. —:1 Fig. 35:5.

19:1. Small potsherd from the flat bottom of a smaller vessel. Reddish-brown ware.

19:2. Small potsherd from the rim of a vessel of blue-black ware.

19:3-4. Two handles of earthenware vessels.

19:5-12. Eight potsherds, probably from four different vessels of reddish-brown and greyish ware.

20:1. Thin whetstone of green slate with a suspension hole near the broader end. 98×32 mm. Pl. 31:11.

20:2. Bronze knife, nearly straight. The handle terminates in a ring with a small knob on top. Back of blade slightly convex. On one side a neat brown "desert patina" green on the other side. L. 17 cm. Br. across ring 1.8 cm., handle 1.2 cm. Pl. 31:12.

21:1. Bronze knife, practically straight and of uniform breadth and thickness. Broken in early times across a small suspension hole. Later on the blade was broken in two. Both handle and blade have triangular section and are not clearly separated from each other. Green verdigris, especially on one side. L. of blade about 9.5 cm. L. 18.6 cm. Br. 1.3—1.4 cm. Pl. 31:2.

About 2 km. above camp B 62, S of Qum-darya.

22:1. Two joined potsherds of thin reddish ware intermixed with grains of sand.

22:2-4. Three fragm. of small flint flakes.

22:5. Fragm. of small flint flake with the median ridge chipped on both sides.

22:6-9. Four small flint chips.

Near to the W of camp B 62, S of Qum-darya.

23: 1-3. Three potsherds of hard-burnt ware, blue-grey or reddish. Recalling Han ware.

23: 4-5. Two small flint flakes.

23: 6. Chip of light-green flint.

23: 7. Small piece of lead.

23: 8. Small piece of iron.

Scattered finds between camp B 62 and a point 4.5 km. W of it, near the right shore of Qum-darya.

24: 1-21. Twenty-one potsherds of fairly uniform ware, hard-burnt, reddish-brown to blue-grey.

24: 22-23. Two small iron fragm.

1600 m. SW of camp B 62, S of Qum-darya.

25: 1. Potsherd of brownish and blue-grey ware, intermixed with sand.

25: 2. Irregular core of light-brown flint or agate.

25: 3-4. Two small flint flakes.

25: 5. Small flint scraper; indistinct type.

25: 6. Small flint chip.

25: 7. Bifacial implement of light-green flint. Coarse knife, unfinished? L. 55 mm. Br. 29 mm. Pl. 5: 10.

25: 8. Chip of green flint.

25: 9. Flat piece of light-red chert with green striation. A little chipped along two edges. L. 105 mm.

25: 10. Pebble of grey flint, one side struck off by man.

S of Qum-darya, between finds Nos. 25 and 27.

26: 1-5. Four complete and one fragmentary coins with thick verdigris. The shape recalls that of Wu-ch'u.

26: 6. Bronze socket, cylindrical with a small perforation 1 cm. below the rim. Probably a mounting for the lower end of the handle of a *Ko*-weapon. L. 57 mm. Diam. 33 mm. Pl. 31: 10.

Between camp B 61 and B 62, about 4 km. S of the latter.

27: 1-5. Five potsherds of a thin-walled, light-red vessel with slightly projecting rim.

About 2 km. SSW of camp B 61, S of Qum-darya.

28: 1. Potsherd from the rim of a vessel with straight neck and a plain moulding 1 cm. below the rim. Red, rather thin ware intermixed with coarse sand.

28: 2. Small potsherd with traces of applied decoration. Thin, brownish-red ware.

28: 3-10. Eight potsherds of the same ware as —: 1.

28: 11. Part of small core of grey flint.

28: 12-14. Three flint flakes.

28: 15. Fragm. of arrow-point of green flint. The base shaped into a short tang. Br. 14 mm. Pl. 4: 14.

28: 16. Arrow-point, willowleaf-shaped, of translucent agate. L. 29 mm. Br. 10 mm. Pl. 4: 13.

28: 17. Flint scraper?, irregular.

28: 18. Small knife of green flint, nearly crescent-shaped. 36×19 mm. Pl. 4: 6.

28: 19. Bifacial implement of dark-green chert, one end straight and unworked, the other end convex. 29×31 mm. Pl. 4: 17.

28: 20. Oval chip from a flint pebble, worked on one side.

28: 21. Oval knife of grey flint, worked on one side. 58×29 mm. Pl. 5: 9.

28: 22. Small knife of brown flint. 45×19 mm. Pl. 4: 9.

28: 23-24. Two chips of green flint, slightly worked.

28: 25. Roughly worked piece of greenish-grey flint. Unfinished axe?

28: 26. Fragm. of a flat piece of quartzite with one edge worked.

28: 27. Various flint chips.

Qum-darya, near camp B 61 about 2 km. below Yardang-bulaq.

29: 1-4. Four potsherds of uniform reddish-brown ware, rather thin and intermixed with coarse sand. Wind-eroded.

About 10 km. W of Hedin's camp 74 on S shore of Qum-darya, and about 44 km. WNW of Lou-lan station.

30:1-4. Four cores of yellowish-brown agate and grey flint.

30:5-8. Four flakes of agate and flint, two of them having retouched edges.

30:9. Flat, oval stone, probably shaped by nature though very symmetrically.

Hedin's camp 75 on an island in the westernmost part of the delta of Qum-darya.

31:1. Bronze trigger from a cross-bow mechanism. 115×18×11 mm. Pl. 31:7.

31:2. Fragm. of a circular bolt of bronze from a cross-bow mechanism. Diam. 1 cm.

31:3. Sheep's tooth.

Finds collected by Mr. Chen 1.5—2 km. N of the Qum-darya delta between 417 and 420 on the map Fig. 37.

40:1. Two pieces of a corroded coin of Wu-ch'u type, without legend. Diam. 21 mm.

40:2. Three fragm. of a corroded coin of degenerated Wu-ch'u type. Nearly square. Diam. about 18 mm.

40:3. Strap-end of bronze in two parts. A rectangular part with a lower narrow end turned backwards (around strap) and fastened to the wider part with a rivet. In the loop thus formed hangs the second part, rectangular, the lower end with an obtuse point. Both parts have chamfered edges at the outer ends and two crossed lines. 83×12 mm. Pl. 30:23.

40:4. Rectangular bronze ring, possibly from a buckle. 26×20 mm. Pl. 30:26.

40:5-8. Four smallish flakes of grey-blue or green flint.

40:9. Piece of flake of yellow-brown flint, one edge a little retouched.

Finds from the same place as K. 13421.

41:1-3. Three Wu-ch'u coins, diam. 22 and 20 mm.

41:4. Coin of Wu-ch'u type but without visible legend. Diam. 26 mm.

41:5. Wu-ch'u coin, diam. 23 mm.

41:6. Wu-ch'u coin, with clipped rim. Pl. 30:9.

41:7. Coin of Wu-ch'u type but without visible legend, possibly clipped.

41:8-11. Four Wu-ch'u coins without outer rim and cast in such a way that the legend has become incomplete. Diam. 18—16 mm.

41:12-13. Two "goose-eye" coins, diam. 13 mm.

Finds either from a place in the Qum-darya delta, or from Lou-lan station.

42:1. Small coin fragm. with a *Wu*.

42:2. "Goose-eye" coin ? Pl. 31:5.

42:3. Bronze boss, nearly hemispherical, hollow, with a straight central pin. Slightly projecting flange at the base of the boss. The top is a little flattened. Diam. 35 mm. H. 16 mm. Pl. 30:25.

42:4. Front part of a bronze finger-ring with flat elliptical bezel with linear design. Diam. has been 22 mm. Pl. 31:6.

42:5. Small bronze pendant, a flat oblong piece with ring-shaped loop at one end; worn out. L. 32 mm. Pl. 31:9.

42:6. Bronze bead of wire laid spirally. Diam. 8 mm.

42:7-8. Two fragm. of bronze pins.

42:9. Flat oblong bronze object with a broader, oval part at one end. The broader part has two perforations and a longitudinal groove. The other end probably broken off. L. 85 mm. Br. 22—6 mm. Pl. 30:17.

42:10. Various bronze fragm., mostly refuse from casting.

42:11. Small lead sinker, disc with central hole. Diam. 15 mm.

Finds from a place in the Qum-darya delta, or from Lou-lan station.

43:1-2. Two iron fragm., one bent to form an angle, one straight.

43:3. Iron arrow-head, three-winged with 4 cm. long tang. Damaged. L. 7.8 cm. Pl. 30:16.

43:4-5. Two iron fragm., one of which is from a nail or pin.

43:6-8. Three small coin fragm., bronze.

43:9. Various bronze fragm., partly refuse from casting.

43: 10-11. Two small fragm., probably from bronze vessels with fluted wall.

43: 12. Spindle whorl made of grey potsherd. Diam. 32 mm.

43: 13. Small piece of turquoise.

Finds collected by servants on N side of the Qum-darya delta at an unknown locality, or localities.

44: 1. Wu-ch'u coin, broken in two. Diam. 25 mm.

44: 2. Bronze arrow-head, three-winged with socket. The bases of the wings form barbs. The socket has three small slit-like openings between the wings. L. 35 mm. W. between the points of the barbs 15 mm.

44: 3. One end of a wooden slip with eight indistinct Chinese characters carelessly written in black. L. 106 mm. Br. 11 mm. Pl. 29: 15.

44: 4-5. Two small fragm. of much decayed wooden records with nearly effaced writing. Br. 8 mm.

Hörner's and Chen's Lop-nor collection, (except the finds from ruins).

Find made about 9 km. to the W of the salt crust at the southern end of the new lake Lop-nor and 8 km. SSE of Stein's Fort L. K. 5/1—31.

K. 13352. Small flake of yellow flint, finely retouched edges. L. 42 mm.

About 3 km. to the east of K. 13352. 5/1—31.

K. 13353: 1. Core of green flint. Flakes chipped off from one side only. L. 51 mm. Pl. 4: 16.

K. 13353: 2. Chip from top of grey flintcore. The straight edge retouched as a scraper. Pl. 4: 15.

About 4 km. to the east of K. 13353. 5/1—31.

K. 13354. Core of dark-grey flint. Oval section. L. 26 mm.

Find made in a wind-eroded hollow some km. W of the large salt crust and a few hundred m. E of K. 13354. 5/1—31.

K. 13355. Bronze buckle with a strong button-shaped hook on the middle of the front part. The rear part has an oval hole for attaching the strap. Thick verdigris. 55×40 mm. Pl. 30: 1.

About 26 km. due S of Lou-lan station near the W border of the large salt crust. 1/2—31.

K. 13356: 1-5. Five small flakes of yellow-brown and grey flint.

About 500 m. S 75° E of K. 13356. 1/2—31.

K. 13357. Core of brown flint made of a flat stone 9 mm. thick.

About 4 km. almost due N of K. 13357. 1/2—31.

K. 13358: 1. Part of an oblong whetstone of grey slate with a suspension-hole near one end. L. 75 mm.

K. 13358: 2. Small chip of striated opal or jasper.

12.5 km. SSE of Lou-lan station near the W border of the large salt crust. The pick from a rich site. 2/2—31.

K. 13359: 1. Core of brown quartzitic stone. Cylindrical. L. 45 mm. Pl. 4: 18.

K. 13359: 2. Core of dark grey flint or agate. L. 38 mm.

K. 13359: 3. Roughed-out core of dark grey flint.

K. 13359: 4-22. Nineteen small fine flint flakes with one or both edges retouched. The longest is 55 mm.

K. 13359: 23-32. Ten small fine flint flakes.

K. 13359: 33-36. Four flint chips.

About 4 km. NE of K. 13359. 2/2—31.

K. 13360. Polished axe of green chert with brown flames. The polishing is concentrated on the broad sides and especially on the cutting edge, which is almost straight but slants slightly, not being parallel to the median line. The narrow sides are not worked. 53×35×12 mm. Pl. 5: 13.

400 m. nearly NNE of K. 13360. 2/2—31.

K. 13361. Thick lead ring, irregularly shaped. Probably a sinker. Diam. 33 mm. Th. 19 mm. Pl. 29: 17.

About 4.5 km. NE of K. 13361. 2/2—31.

K. 13362. Core of grey flint, regular, slightly pointed. L. 30 mm.

500 m. NE of K. 13362. 2/2—31.

K. 13363: 1. Small potsherd of rather thin, sandy ware, grey and reddish.

K. 13363: 2-5. Four small flint flakes.

600 m. NE of K. 13363. 2/2—31.

K. 13364. Small fine flake of light-grey flint. L. 41 mm.

About 200 m. NE of K. 13364. 2/2—31.

K. 13365. Polished axe of brown chert, very well made throughout. The cutting edge is nearly straight (damaged in one place). 63×46×13 mm. Pl. 5: 21.

Scattered finds in the region somewhat to the W of K. 13363, about 11 km. ESE of Lou-lan station. 20/2—31.

K. 13366: 1. Piece of bronze sheet, possibly from a vessel.

K. 13366: 2. Small roughed-out core of grey flint. One end battered.

K. 13366: 3-5. Three flint flakes with retouched edges.

K. 13366: 6-7. Two small flint flakes.

Between K. 13361 and K. 13365. 2/2—31.

K. 13367. Polished axe of dark-green chert. Short and broad. The cutting edge is quite straight. The butt left unworked. 50×41×13 mm. Pl. 5: 20.

Scattered finds between K. 13359 and a spot 5 km. NE of K. 13364. 2/2—31.

K. 13368: 1-4. Four small cores of grey flint and light-green agate.

K. 13368: 5-15. Eleven small flakes of grey, green and yellow flint and agate.

K. 13368: 16-24. Nine small flakes with retouched edges. —: 18 Pl. 4: 11.

K. 13368: 25. Flake of yellowish-brown agate with retouched edges. The somewhat broader point forms a good scraper. Pl. 5: 6.

K. 13368: 26. Flake of yellow agate with retouched edges. The median ridge is partly chipped on both sides. L. 6 cm. Pl. 5: 7.

K. 13368: 27. Large pointed scraper made of a triangular sherd of green flint. One straight edge retouched. 75×48 mm.

K. 13368: 28. Polished axe of black-green chert, very thin. The butt left unworked. The cutting edge slightly convex. 60×44×9 mm. Pl. 5: 18.

K. 13368: 29. Polished axe of green chert, short and broad. Only the lowest part of one of the narrow sides is polished, the rest and the butt being left unworked. The cutting edge nearly straight. 54×47×15 mm. Pl. 5: 19.

K. 13368: 30. Polished miniature axe or chisel of green chert. The cutting edge is slightly convex. The butt left unworked. 42×32×7 mm. Pl. 5: 12.

K. 13368: 31-32. Two chips of flint and chert.

K. 13368: 33. Iron dagger blade or javelin. Much corroded and broken in several pieces. L. about 145 mm.

K. 13368: 34. Fragm. of a bronze ring made of wire.

About 9 km. nearly N of Stein's Fort L. K. 6/1—31.

K. 13370: 1-2. Two small flakes of yellow flint.

About 12 km. N of K. 13370. 7/1—31.

K. 13371: 1-2. Two flint cores.

K. 13371: 3. Small flint flake, weathered.

11 km. nearly N of K. 13371. 7/1—31.

K. 13372. Fine flake of yellow flint. 48×11 mm.

About 300 m. NE of K. 13372. 7/1—31.

K. 13373. Small oval bronze ring made of wire. Diam. 19—15 mm.

Scattered finds along the route between the finds K. 13371 and K. 13376. 7/1—31.

K. 13374: 1-3. Three small fine flakes of green and brown flint with well retouched edges.

K. 13374: 4-5. Two small flint flakes.

K. 13374: 6-7. Two chips of light-green flint.

Sandy depression in wind-eroded clay 14 km. WSW of Lou-lan station. The pick from a rich site. 7/1—31.

K. 13375: 1. Fragm. of brown flint core.

K. 13375: 2. Small flake of brown flint or agate with partly retouched edges and the median ridge chipped on both sides. L. 47 mm.

K. 13375: 3-5. Three small flint flakes with retouched edges.

K. 13375: 6-7. Two piercers or awls made of small flint flakes. L. 34 and 27 mm.

K. 13375: 8-46. Thirty-nine small flint flakes with one or both edges retouched. The largest, —: 8, is 62×11 mm. Pl. 5: 3. —: 12 Pl. 5: 4.

K. 13375: 47-68. Twenty-two small flint flakes, several with worn edges.

K. 13375: 69-72. Four flint chips (refuse).

Scattered finds between K. 13375 and a point 2 km. N of it. 7/1—31.

K. 13376: 1. Tubular bead of white-blue marble, L. 21 mm. Diam. 11 mm. Pl. 29: 11.

K. 13376: 2. Half mace-head of white marble, nearly globular. Diam. along hole 61 mm. perpendicularly to the hole about 70 mm. Pl. 29: 12.

K. 13376: 3. Oblong whetstone of grey slate. 155×22×29 mm.

K. 13376: 4. Lump of metal from bronze smelting.

K. 13376: 5. Small bronze piece with fine verdigris.

Scattered finds along a line 1.5 km. towards NNE from the Lou-lan station. 20/1 and 18/2—31.

K. 13379: 1-5. Five smallish cores of grey flint. —: 1 Pl. 5: 14.

K. 13379: 6-9. Four small fine flint flakes, two of them having one edge slightly retouched.

K. 13379: 10. Small eye-bead of dark blue-green glass. Only the hollows remain of the four "eyes". Diam. 8 mm.

K. 13379: 11. Wu-ch'u coin. On the reverse is a diagonal rib from each of the two upper corners of the hole. Diam. 25 mm.

K. 13379: 12. Small open ring made of thin bronze wire.

K. 13379: 13. Fragm. of long bronze pin, probably a hair-pin.

K. 13379: 14. Small bronze fragm. possibly from rim of mirror.

K. 13379: 15. One end of a rectangular iron fitting or suchlike with a big rivet hole. Br. 3 cm.

Scattered finds within a distance of 6 km. towards ESE from the Lou-lan station. 19/2—31.

K. 13380: 1. Core of grey flint, flaked off on one side only. L. 4 cm

K. 13380: 2-3. Two small flakes of grey flint.

K. 13380: 4. Broad irregular flake of yellow flint or agate. Probably an unfinished scraper. L. 43 mm.

K. 13380: 5. Bronze lamina, leaf-shaped, with small hole through the widest part. Broken in two in ancient times. 67×43 mm. Pl. 29: 7.

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About 6 km. NNE of K. 13365, near old river bed. 3/2—31.

K. 13381. Bronze ring, circular with oval section. Thick verdigris. Diam. 36 mm. Pl. 30: 21.

About 4 km. N of K. 13381. 4/2—31.

K. 13382. Fragm. of the rim of a large bronze basin or cauldron. Thin ware. Fig. 35: 11.

About 2 km. NE of K. 13382. 4/2—31.

K. 13383. Lump of bronze, refuse from smelting.

Near the pottery kiln 8 km. NE of the Lou-lan station. 21/2—31.

K. 13384: 1. Core of brown flint. L. 37 mm.

K. 13384: 2. Small bronze fragm.

About 1 km. ENE of K. 13384. 5/2—31.

K. 13385: 1-4. Four small flint flakes, three of them having retouched edges.

Finds made quite near to K. 13385. 17/2—31.

K. 13386: 1-5. Five small flint flakes, some with worn edges.

K. 13386: 6. Piercer made of a small flint flake. L. 32 mm.

K. 13386: 7. Knife made of a naturally thin piece of green flint. Equally worked on both sides. One straight edge, the other worked only to half its length. Unfinished? L. 7 cm. Pl. 5: 8.

K. 13386: 8. Fragm. of whetstone of slate with a large suspension hole. Br. 28 mm. Pl. 29: 16.

K. 13386: 9. Small piece of bronze.

K. 13386: 10. Small piece of iron.

1 km. N of K. 13386. 5/2—31.

K. 13387. Wu-ch'u coin. Diam. 25 mm.

Finds from two places between K. 13385 and a place 6 km. N of it. 5/2—31.

K. 13388. Spindle whorl of a brown-red potsherd. Diam. 5 cm.

K. 13389: 1. Core of grey flint, cylindrical. L. 3 cm.

K. 13389: 2-3. Two small flakes of grey and yellow flint.

Below mesa LM 3 about 2.3 km. WSW of L. E. 25/1—31.

K. 13391: 1-2. Two cores of dark grey flint. L. 35 and 19 mm. —: 1 Pl. 4: 20.

Mesa about 9 km. WNW of L. E. (On the top of the mesa there is a cemetery). 23/1—31.

K. 13392. Foot of a clay *Ting* tripod, much weathered. Yellowish-red ware, the surface has probably been dark blue or grey.

About 9 km. W of K. 13391. 23/1—31.

K. 13393. Axe? of light-green flamy chert or jade. One side probably polished by art, the other strongly wind eroded. L. 42 mm.

About 12 km. WSW of L. E. 19/2—31.

K. 13394. Round flat piece of bronze. Diam. 32 mm.

500 m. SW of K. 13394. 19/2—31.

K. 13395: 1-9. Nine small flint flakes, one of them with retouched edges.

K. 13395: 10. Six small flint chips.

About 500 m. SW of K. 13395. 19/2—31.

K. 13396. Wu-ch'u coin. Diam. 25 mm.

About 3 km. SW of K. 13396. 19/2—31.

K. 13397: 1. Core of green-grey flint. L. 25 mm.

K. 13397: 2. Fragm. of a Wu-(ch'u) coin.

K. 13397: 3-4. Two pieces of bronze sheet.

About 800 m. SW of K. 13397 and 10 km. nearly due N of Lou-lan station. 19/2—31.

K. 13398: 1. Small core of grey flint.

K. 13398: 2-8. Seven small flint flakes, one of them with a retouched edge.

Find from Mr. Chen's route along the S border of the delta and almost due N of Lou-lan station. 19/2—31.

K. 13399: 1-5. Five small flint flakes, two of them with retouched edges.

Find on S side of Qum-darya near the head of its delta, and about 16 km. NW of Lou-lan station. 8/1—31.

K. 13400. Flat ring of white marble. One surface well preserved, the other wind-eroded. Diam. 81—84 mm. Th. 6 mm. Pl. 29: 10.

Between 392 and 400 on the map Fig. 37. 7/2—31.

K. 13402: 1. Flake of black flint, retouched edges. L. 8 cm.

K. 13402: 2. Flake of green flint.

Near the ruin that contained the find K. 13404. 12/2—31.

K. 13405: 1-2. Two cores of grey flint, —: 2 fragmentary. —: 1 Pl. 4: 19.

K. 13405: 3—5. Three small flint flakes, one with retouched edges and one with worn ones.

Scattered finds between Chen's camp 91 b and 91 c. 13/2—31, either NE or SW of 404.

K. 13406: 1-4. Four small flint flakes, one of them with a retouched edge.

Scattered finds between 400 and 411 on the map Fig. 37. 20/2—31.

K. 13407: 1. Irregular core of light-green flint.

K. 13407: 2-12. Eleven small flakes of grey, green, yellow and brown flint and agate, three of them with retouched edges.

6 km. ENE of the ruin that contained the finds K. 13401, and at the N shore of the northernmost branch of the delta. 20—21/2—31.

K. 13408: 1. Miniature bronze vessel, shaped like a scoop. The bottom is flattened, otherwise the shape is nearly semiglobular. The 25 mm. long handle is hollow to receive a wooden haft that has been kept in place by a rivet through a hole in the socket. Two grooved lines run round the widest part of the vessel; the handle has some lines crossing one another. Diam. 44 mm. H. 25 mm. Pl. 30: 18.

K. 13408: 2-3. Two small pierced lead discs, probably sinkers. Diam. 18 and 10 mm. —: 2 Pl. 30: 19, —: 3 Pl. 31: 3.

K. 13408: 4. Fragm. of a whetstone of green slate with suspension hole.

K. 13408: 5. Spindle whorl of bitumen. One side flat, the other vaulted. Diam. 45 mm. Th. 18 mm. Pl. 29: 3.

Find near camp 91 (though it might have been found elsewhere and merely dropped near the camp).

K. 13409. Small fragm. of the thickened rim of a bronze mirror decorated with two rows of small triangles, "saw tooth" pattern and a zig-zag line. Br. 18 mm. Th. 4 mm.

Between Chen's camp 91 a and 91 b. 12/2—31, somewhere between 401 and 412 on map Fig. 37.

K. 13410: 1-4. Four small flint flakes, —: 4 with retouched edges Pl. 4: 10.

K. 13410: 5. Flake of yellow flint or agate. Thick, and with retouched edges. The median ridge is chipped on both sides. Probably used as a scraper. 47×11 mm. Pl. 5: 5.

5 km. NE of ruin 404. 22/2—31.

K. 13411: 1. Fairly large core of green flint. Flakes split off along half of the circumference. Pl. 4: 22.

K. 13411: 2. Axe made of a flat piece of brown and red, flamy chert. The convex cutting edge has probably been polished. The whole object is much weathered. 67×35 mm. Pl. 5: 17.

About 11 km. ENE of ruin 404; in the N part of the Qum-darya delta. 11/2—31.

K. 13412. Small flake of grey flint with retouched edges. L. 43 mm.

Mesa somewhat to the north of the delta and between 411 and 418 on the map Fig. 37. 22/2—31.

K. 13413. Blade of bronze knife (broken in two) with convex back, which is thicker than the rest of the blade. The edge is damaged. L. 89 mm. Pl. 30: 22.

Along the route between 411 and 418 on the map Fig. 37. 22/2—31.

K. 13414: 1. Core of grey flint. L. 43 mm.

K. 13414: 2-5. Four small flakes of flint, three of them having retouched edges.

K. 13414: 6. Irregular drill of red agate with short point and one convex edge retouched as a scraper. L. 35 mm. Pl. 4: 8.

Nearly 11 km. SSW of Astin-bulaq and 2 km. N of the northernmost branch of the delta. 24/2—31.

K. 13415. Irregular axe of dark-green chert, polished round the straight cutting edge. 83×37×19 mm. Pl. 5: 15.

Between Astin-bulaq and the Qum-darya delta, 29.5 km. N 19°E of Lou-lan station. (Norin).

K. 13416. Front part of a large bronze plaque or buckle. The lost central part has apparently been wider than the rectangular front part. The strap has passed through a slitlike hole and been fastened to a projecting hook. The upper and lower edges are bordered with a rope pattern. In each corner a tumular knob with seven elevated dots. Besides there are three raised circles with a marked centre. A raised line has surrounded the lost central part. Br. 73 mm. Pl. 30:4.

About 8 km. SE of Astin-bulaq. (Norin).

K. 13417. Bronze bracelet. The ends are flattened and decorated with three lines crossing one another at one point, and at the sides of these are some V-shaped lines. Probably meant to represent a serpent's head, though very degenerate. Diam. about 65 mm. Pl. 30:24.

Near to the N rim of the delta, and due S of Astin-bulaq. (Norin).

K. 13418:1. Small flake of grey flint.

K. 13418:2. Arrow-point of reddish-brown flint, willowleaf-shaped. 28×11 mm. Pl. 4:12.

K. 13418:3-8. Six Wu-ch'u coins. Diam. 25 mm.

K. 13418:9-10. Two Wu-ch'u coins with a small elevation in the middle of the lower rim of the hole. Diam. 25 mm. —:9 Pl. 30:8.

K. 13418:11-12. Two broken Wu-ch'u coins.

K. 13418:13. Five fragm. of coins, with a "-ch'u".

K. 13418:14. Five fragm. of coins, with a "Wu-".

K. 13418:15. Ten small fragm. of coins, probably of Wu-ch'u.

On the W side of the northernmost freshwater bay of Lop-nor, between camp H. 98 and H. 106. 16/3—31.

K. 13419. Small flake of grey flint. L. 63 mm.

Near camp H. 106 at point 420 on the map Fig. 37. 8/3—31.

K. 13420. Bronze arrow-head, triangular with hexagonal shank. The three edges are prolonged to form barbs. On each flat surface a triangular depression. The tang has been iron. 26×12 mm. Pl. 30:13.

100 m. N of camp H. 106. Scattered along a line of 30 m. 2/3—31.

K. 13421:1. Wu-ch'u coin with a raised crescent-shaped line on the upper part ("nail impression"). Diam. 24.5 mm.

K. 13421:2-11. Ten Wu-ch'u coins with a small elevation in the middle of the lower rim of the hole. Diam. 25—24.5 mm.

K. 13421:12-63. Fifty-two Wu-ch'u coins, some of them very thin owing to wind erosion. Diam. 25.5—24 mm.

(Cf. Nos. 41:1—13 found at the same place).

Near camp H. 106. 13/3—31.

K. 13422. Core of green flint. Wind-eroded. L. 4 cm.

Near the shore at camp H. 106. 11/3—31

K. 13423:1-13. Thirteen lumps of coins joined together by corrosion, and containing from twenty-seven to three coins, Wu-ch'u as far as can be judged, about 120 coins in all. They were stringed when lost.

K. 13423:14-21. Eight Wu-ch'u coins with a small elevation in the middle of the lower rim of the hole. Diam. 25.5—24.5 mm.

K. 13423:22-31. Ten Wu-ch'u coins. Diam. 25—24.5 mm.

K. 13423:32-36. Five fragmentary Wu-ch'u coins. Diam. 25 mm. For the entire find see Pl. 31:1.

On the shore near camp H. 106. 11/3—31.

K. 13424:1. Three fragm. of a bronze mirror. The thickened rim forms arcs on the inside. (Complete specimens have sixteen such arcs). The central part has been decorated in high relief; apparently a "hundred nipples" type. Diam. has been 108 mm. Th. of rim 4.5 mm. Pl. 30:20.

K. 13424:2. Short curved bronze wire.

Near the shore and near camp H. 106. 15/3—31.

K. 13425. Bronze arrow-head, triangular, with hexagonal shank. Very blunt point. 35×12 mm. Pl. 30:12.

Near the shore and near camp H. 106. 9/3—31.

K. 13426. Bronze buckle, oval with two symmetrically arranged openings for the strap. The tongue is hinged to the strong middle part. 50×45 mm. Pl. 30:2.

At the shore near camp H. 106. 9/3—31.

K. 13427. Crossbow mechanism of bronze. The main body is 122×33×42 mm. The straight trigger is 83 mm. long. The two bolts have cubical heads. One side has green verdigris, the other brown desert patina (just as is the case with most of the Lop-nor bronzes found on the surface of the ground). Pl. 29:18.

Find between the western and the middle one of the three freshwater bays at N Lop-nor. 12/3—31.

K. 13428. Oblong rough knife or unfinished point of green flint. 59×18 mm. Pl. 5:2.

500 m. W of the ruin T'u-ken. 2/3—31.

K. 13429:1-2. Two pieces of sheet bronze, from a vessel?

Find on the E side of the easternmost of the three freshwater bays in the Lop-nor. 17/3—31.

K. 13431:1. Small flake of grey flint.

K. 13431:2. Piercer made of a flake of yellow flint or agate. L. 27 mm. Pl. 4:7.

K. 13431:3. Thin coup-de-poing or bifacial blade of brown flint. 66×35×10 mm. Pl. 5:1.

Find about 3 km. SSE of T'u-ken. (Marked 433 on the map Fig. 37). 2/3—31.

K. 13432. Bronze buckle identical with K. 13426. 48×43 mm. Pl. 30:3.

150—200 m. W of K. 13432. 1/3—31.

K. 13433. Bronze arrow-head, triangular with hexagonal shank. Much corroded. 28×10 mm. Pl. 30:14.

Above shore cliff E of Great Lop-nor, about 84 km. E of Lou-lan station. 23/3—31.

K. 13434:1. Bronze arrow-head, three-winged with round body. The wings are rather small, with blunt edges and ending in a very blunt point. Between two of the wings the body has a shallow, triangular depression. An iron tang has been inserted in a hole in the base. L. 49 mm. Diam. 9 mm. Pl. 30:15.

K. 13434:2-5. Four bronze tubes with a strong hook near the closed end. Mountings for the ends of canopy ribs of wood. L. 42 mm. Diam. 7 mm. —:2 Pl. 30:6.

7. YING-P'AN.

Ying-p'an is situated on the border between the Lop-nor and the Quruq-tagh regions. On the way from Shindi to Tikenliq, in April 1928, one afternoon was spent there, and the ruins of stupas as well as the circumvallation were visited. KOZLOV had discovered them in 1893, and they had afterwards been searched by STEIN. I did not undertake any excavation. Near to the east of the circular fortress a few pottery fragments were picked up from the ground together with the small bronze buckle Pl. 15:2.

Afterwards, when I had returned to Shindi, ABDURAHIM handed over a bronze mirror to me as a present to Dr. HEDIN, his old master. ABDURAHIM had found this mirror (Pl. 15:4), which is of a common type with dragon and tiger motif, near the graves excavated by STEIN. His statement as to its origin is completely reliable.

The occurrence of this mirror of the later Han dynasty[1] in this place is of special importance, as it is one of the few datable objects known from here. As well as the coins and the silk found by STEIN it was imported from China proper. STEIN, however, discovered four Kharoshthi documents among the stupa ruins, documents written by some Indian, i. e. a foreigner. And in one of the graves he found a small glass tumbler with cut ovals, undoubtedly an importation from far off Syria (Ying III. 3. 06). This mixture of Chinese, Indian and Near Eastern objects makes Ying-p'an a typical representative of the Lou-lan culture.

The lacquered wooden vase Ying. III. 3. 07 (Stein 1928, Pl. CX), is of the same type as the one found by HEDIN outside the coffin in Grave 35 (Pl. 27:6).

The geographical position of Ying-p'an predestinates it to be a station on the part of the Silk Road running between Lou-lan and Korla. The part lying east of Ying-p'an has been abandoned, most likely, for 1600 years, the western part from Ying-p'an to Korla was still used in the T'ang period. It is marked by a line of Han dynasty watch-towers, ten in all, traced by HEDIN in 1896 and 1900, and subsequently examined by STEIN. I have visited a few of them; in Pl. XIV b-c are seen Stein's towers Y. VI and Y. VII.[2] When they were constructed Könche-darya may have followed a slightly more northerly bed, water thus having been nearer to the towers than at present. On the other hand, some of the towers are situated so far from any present or old water-course that the necessary water supply has had to be drawn from wells in any case.

The present road from Turfan via Tikenliq to Charkhliq passes Ying-p'an. It may very well have existed at the time of the early settlement, but the traffic between North and South can hardly have been heavy at that time. In 1934 I discovered a hitherto unknown line of communication between Ying-p'an and Charkhliq following the Qum-köl and what I have called The Small River, and probably passing Merdek, cf. p. 100. But if any traffic coming from Turfan followed The Small River it did not touch Ying-p'an but followed a direct line between Toghraq-bulaq and Qum-köl.

STEIN has identified the Ying-p'an site with "the town of Chu-pin" of the Ch'ien Han-shu. HERRMANN has lately proposed its identity with I-wu, though earlier he located I-wu, as do all other authorities, at Hami. Chu-pin he places at Merdek instead. I have corresponded with Prof. HERRMANN regarding this problem, and in his last letter he informs me that he has now returned to his former standpoint and again places I-wu at Hami.

Long after the abandoning of the old Chinese "town of Chu-pin" with its circular fortress, its shrine and stupas, and its grave yards, the place was resettled by Mo-

[1] KARLBECK, who is the last to have published a mirror chronology, places this type in the first century A. D. (Karlbeck 1938, E. 22).

[2] The first of these towers STEIN calls Sanje. This is the Mongolian word for tower. It is generally pronounced *tsonch* or *tsonchi,* and goes back to the Tibetan *dzong,* fortress, watch-tower, etc.

hammedans. We do not know the exact date of this settlement. Judging from the rather well-preserved tomb structures of mud it existed a few centuries ago. HEDIN supposes 150—200 years. The age of this settlement has no direct bearing on Quruq-darya and the hydrography of Tarim. As pointed out by HUNTINGTON it has drawn the water supply necessary for the cultivation of its fields from the brook Buyantu-bulaq. The irrigation was effected by means of a canal and a reservoir, the remains of which are still to be seen. Nowadays the water of Buyantu-bulaq reaches Ying-p'an only after heavy rainfall in Quruq-tagh, as we had an opportunity of witnessing in April 1928. But with the aid of a well constructed canal it might reach as far as this more or less permanently. The quality of the water is, however, not the very best for the purpose. Immediately outside the mouth of Buyantu-bulaq there are traces of ancient fields and canals on the left-hand side of the river bed. ABDURAHIM of Shindi informed me that these fields were cultivated some sixty years ago, but had to be abandoned after the lapse of a few years because of the salinity of the water in the brook. The fields once watered by the same stream further down, at Ying-p'an, must have suffered much more from this unsuitable quality of the water.

When a postal service was inaugurated between Urumchi and the lower Tarim region (i. e. the present-day district of Lop) a rest house was built at Ying-p'an near the spring-fed pools in the ancient river bed. All that remains of this brick house is the crumbled walls. Contemporaneous ruins of post stations are to be found at the wells of Toghraq- and Azghan-bulaq along the road to Turfan.

DESCRIPTIVE LIST OF OBJECTS FROM YING-P'AN

Find made by Abdurahim of Shindi on the burial site at Ying-p'an.

K. 13436. Chinese bronze mirror. The central vaulted knob is surrounded by a quatrefoil. Outside this runs a raised plain band. Between this and the thickened border lies the main decoration, bordered on each side by a striated band and consisting of four animal representations (dragon and tiger) with raised contours. Between each animal there is a small boss similar to the central one. The outer border has a "double wave" band with a small dot in each interspace. Brown-red patina with green spots. Diam. 125 mm. Th. of rim 5 mm. Pl. 15:4.

Near to the E of the ruined circumvallation.

K. 13437:1-2. Two potsherds probably from the same large vessel. Decorated with straight or curved bands incised with a three-toothed instrument. Hard-burnt, light-red ware.

K. 13437:3. Fragm. of the narrow neck (or spout?) of a vessel of the same earthenware as the preceding one.

K. 13437:4. Bronze ring, D-shaped, probably from a buckle. 21×16 mm. Pl. 15:2.

PART III.

THE NORTHERN BORDER REGION OF LOP-NOR

I. A QURUQ-TAGH ROCK CARVING.

When HENNING HASLUND and I travelled from Shindi to Ying-p'an, in April 1928, we followed the most direct road through the Buyantu-bulaq[1] canyon, a small road that is far from suitable for camels. In the deep-cut valley with its luxuriant vegetation of poplars and tamarisks the going is good except for one place where the path leaves the canyon and runs up among the mountains on the right side to avoid an impassable spot in the river valley where there is a waterfall. In this detour in the mountains the camels had a very hard time crossing steep slopes, ravines with large boulders and some passages that were too narrow to allow a loaded animal to pass.

6.5 km. south of Shindi we saw that the lower part of the beautiful steep cliff, more than 100 m. high, on the left-hand side of the valley was covered with rough pictures engraved in the rock, Pl. XV. We did not stop to examine them at that time, but on my next visit to Shindi I spent several days in early November at the spot, filled the engravings with white colour, and took many photographs, some of which are reproduced here.

After having got access to "Innermost Asia", published in 1928, I found that STEIN had been the first foreigner to observe these rock pictures, but he had had no opportunity to pay any closer attention to this interesting place, which he calls Inkur-otak.

The brook makes one of its largest windings at this place, encircling a small open space with poplars, tamarisks and high grass. The foot of the limestone cliff with the engravings is washed by the water of the brook.

[1] The name given to the Shindi river by the Turks is Buyantu-bulaq, i. e. a mixture of Mongolian and Turki, not altogether uncommon in this region. It means 'the propitious well'. In HEDIN's German transcription the first part is spelled Budschentu; those using English transcription have written it Bujentu. It is interesting to note that STEIN, unaware of the first part being Mongol, supposes the name to be a "transformation which the name Bejan-tura has undergone in careless Turfanlik pronunciation" (Stein 1928, p. 752 note 6). Bejan-tura is the name given to the Buddhistic ruins at Ying-p'an. ABDURAHIM assigned the same name to the ruined tower in the northern mouth of the Shindi river. According to JARRING bejan is a medicinal plant, tura is tower. ABDURAHIM pronounced the river name something like Böjentu-bulaq.

The distance between the extreme groups on the cliff is 54.5 m. On the central part the highest figures are situated as much as 5.45 m. above the ground, the lowest only 0.65 m. Thus the main part of the central group could not be reached by a man standing on the ground, and there are no ledges or breaks in the wall to stand on. Only with the help of a ladder, which, fortunately, was at hand at Shindi, was I able to trace the upper engravings with white. As the artists most certainly did not stand on ladders when making the figures, it is obvious that some change in the level of the ground has taken place. It was also soon discovered that the brook had not always flowed close to the cliff, but 40—50 m. away from it, where traces of a dry bed were found. The cliff itself also showed how it had been covered by detritus to an average of 3.5 m. above the present level. Below this level the wall is quite smooth and clean, showing that it has been protected from the influence of the atmosphere, above it the surface of the rock is much weathered and covered with lichen. In Pl. XVI a the letters A—a mark the clear line of demarcation between these parts, i. e. the level of the ground before erosion set in. This hint given by Nature herself suggests a division of the carvings into one older and one younger facies. These two "strata" are also clearly differentiated stylistically. Below the lower stratum there is a third facies, quite modern, as is easily discernable both from the style and the content.

There are four main groups of engravings on the wall of the rock, and some scattered figures in the interspaces. The description runs from left to rigt, i. e. down-stream.

The first group, Pl. XVII a, is only 60×95 cm., the lower edge 2.8 m. above the brook. It consists of a man on horseback, five men on foot, one of whom seems to be leading a camel with one hand, an ibex, and some unclear lines. The figures are of poor quality both in point of style and technique. The camel, for instance, is characterized only by means of two vertical lines denoting the humps. The horns of the ibex are considerably exaggerated and badly traced. The figures are carelessly hacked into the rock, probably with a stone. The markings are quite shallow, and the contours are therefore not very distinct.

The second group is the most instructive, on account of its "stratigraphy" already touched upon, and also because it is the richest one. On the total view Pl. XV it is seen in the centre, whereas Pl. XVI a shows it separately. It measures 6.35 m. in length and 3.55 m. in height. On Pl. XVI a the different levels which mark the three stages in the origin of the carvings, have been marked in such a way that the oldest lies above an almost horizontal line A—a, the middle stage between this line and a line B—b, and the youngest stage below the last-mentioned line. All carvings are on an almost vertical wall.

On the left part of the upper level there are small antelopes (or at least antelope-like animals) two ibexes, two men on horseback each followed by a dog? or colt?,

a bird, a hand with slender fingers, a small foot, a swastika, a sword?, a t a m g h a sign?[1] and some indeterminable figures. Most of the animals are turning right.

The central part of the upper level has three similar hands close together, and two hands separately just on the border to the next level, a pair of small feet, four horsemen riding to the right, a snake-like band, and some unclear figures, the largest of which resembles a pair of scissors with dentated blades.

The right part of the upper stratum is dominated by two stylized trees with straight parallel branches having hooked ends. They are possibly meant to represent the tree of life. Immediately below them are pairs of vertical lines with a hook at the lower end and the upper ends joined by a horizontal line to form three groups of one, three and five pairs respectively. They rather suggest the shape of human legs, as the hooks are turned left and right alternatingly.[2] Above and on both sides of the three hands there may have been similar "legs". There is also a curved line with hooks to the right of the trees. A row of three horses, the last with a rider, may represent an equestrian figure in pursuit of two horses. They have a well defined broad body, whereas two other horses quite near are much thinner. There are also one "thin" and one "fat" camel beside several fragmentary figures. In all, there are about eighty-five figures on this upper stratum.

The figures of this level are executed in profile and are quite naturalistic, i. e. from a primitive point of view. There are no marked exaggerations in the shapes of the animals. They seem to have been made with a metal chisel as the lines are narrow and well defined. Both style and technique are rather homogeneous, which points to a limited period for the genesis of the figures. This part of the rock is covered with lichen. Some of the figures are fragmentary, as small parts of the surface have peeled off as a result of long exposure to the weather.

Practically the whole surface of the middle stratum is crowded with figures, and there is no need to make any vertical divisions. The animals are predominant. There are about twenty camels with more or less tower-like humps (one may have a rider), thirteen dog-like beasts, ten "horses" with long legs and tails, seven ibexes and one deer (the latter probably belonging to the lowest stratum). Four men are mounted on horses and three are on foot, one of these may be an archer. There are several unclear animal representations as well as other figures, for instance a ring and a highly stylized hand. In all, the number of figures on this middle stratum is about ninety. They are less distinct and more shallowly made than those on the upper level, probably made by pocking with a stone. Only on the figures bordering the upper stratum is there any lichen, otherwise the whole surface is clean. Not all of the indistinct figures have been filled in with white colour, cf. p. 188.

[1] In using this term I follow the precedent set by those who have published rock pictures from N. Mongolia and S. Siberia, even though the signs on our petroglyph may have another meaning than the proper t a m g h a signs, which are owner's marks.

[2] Otto Mänchen-Helfen (1931, p. 123) mentions the occurrence of freely walking legs, the body never having been executed, on a rock painting in Uryangkhai (Tanu-tuwa).

The middle and lower levels jut into each other. On the left part for instance the lowest line of figures marked with white in Pl. XVI a belong to the middle level. They are well-made ibex and goat representations, and two curious scenes with a man holding a goat by the tail.

The lowest level, about the lower third of Pl. XVI a, is relatively recent work. This is attested both by content and technique. The two camels, two horses and two birds are drawn with a totally different conception of art than that manifested in the upper figures. The proportions are good, and even the narrow legs are marked with double contours. The lamaistic signs, two endless knots, a spoked wheel etc., are of a piece with the Mongol script engraved here. On the left lower part there are three lines, Pl. XVIII b (also visible on Pl. XVI a though they are not painted white). I am indebted to Mr. W. A. UNKRIG, Frankfurt-am-Main, for his kindness in reading this inscription. It runs *burxat cakgün zuruk,* i. e. 'Pictures from the time of the Buddhas'.'

It is written with the script used by the Torgut Mongols of Sinkiang in our days, which was invented in 1648 by ZĀYA PAṆḌITA, but it is not quite modern. Whether the author of the inscription or some of his fellow Mongols at the same time drew the well-designed animals and the Buddhistic symbols, or whether the occurrence of the latter inspired the writing of the three words is of no consequence, as they are equally modern as compared with the pictures higher up on the cliff. In any case the Torgut wanted to express his belief in the very venerable age of the existing engravings.

Above the three lines of writing a single line is visible on Pl. XVI a but it is apparently without meaning. There are also three more single lines of very uncertain writing, also of Mongol type but too poorly made to allow of any reading.

These modern figures are executed with dotted lines pocked into the rock with a pointed tool. The surface of the lines looks fresher than is the case with the upper figures.

On this main carving there are apparently to be found both the oldest and the youngest of the stages in the development of this Quruq-tagh rock engraving. It thus forms an excellent example of how the Inner Asiatic rock pictures were made successively during prolonged periods. The same observations can be made on the reproductions of certain Siberian and Mongolian petroglyphs.

The third group of engravings lies a few metres to the right of the preceding one. It, also, is quite large, about 9 m. long and 3.5 m. high. Here the rock is uneven and forms a rounded ledge; when standing on this one can easily reach the highest pictures. The lowest ones lie 0.8 m. above the water-level. Here the "stratigraphy" is less evident, but four "styles" can be discerned: 1) highly stylized animals, highest up on the wall and corresponding to the upper level of the preceding group, 2) long-legged animals, corresponding to the middle stratum of the preceding group,

3) ibexes with narrow contours, 4) shallow figures in the interspaces between the rest, quite modern. Cf. Pl. XVI b. Pl. XVII c shows the righthand part. In all, this group contains some 165 figures.

Those highest situated, which also look oldest, consist of a man with spread fingers, Pl. XVII c, an archer(?), seven low and highly conventionalized beasts, three bucks, and some fragmentary elements.

Of the long-legged animals only one or two are seen on Pl. XVII c, but the ibexes are well represented on that photo. They have been given enormous horns, a good many of them being very artistically made. Some of them have the body marked with a double line. A few camels, both "fat" and "thin", some smaller quadrupeds, and two elegantly outlined beasts running right on the right edge of the surface complete the fauna here. A few human representations (only one on Pl. XVII c) are also mixed with the animals, one of them seems to have a phallus, one carries a burden on his back, two or three are riding on horseback. There are one large footprint and four hands of the same short and broad type as on Pl. XVII b.[1] Two long lines may possibly be interpreted as snakes, but the meaning of some "enclosures" with dividing lines is uncertain. There is a wheel-shaped figure and possibly also a couple of t a m g h a signs. GRANÖ depicts some t a m g h a signs from NW Mongolia of about the same appearance (Granö 1910, Figs. 18 and 40) and APPELGREN-KIVALO's Plates 118, 199, 204 and 224 also show some analogies to the "enclosures".

Also on this group all the indistinct engravings and most of the modern ones could not be filled with white.

Near to the right of this group lie the six figures on Pl. XVIII a: a buck with slightly curved horns reaching to the tail, a camel, a small indeterminable beast, an ibex, a tree-like t a m g h a and a "hand" with only three fingers. They cover about one square metre.

From here onwards the cliff is more uneven and thus less suited for large groups of figures. Consequently, only scattered elements have been engraved here.

Next to the group Pl. XVIII a follows an isolated tree of the same fine execution as that of the two trees on Pl. XVI a, and situated at the same height above the brook.

About 3 m. further downstream there is a man on horseback, one hand lifted. His mount is drawn as a horizontal line with four straight legs.

Below this there are an ibex and a camel, both incomplete. Then come two bucks.

The last group, Pl. XVII b, is composed of two hands with very small palms, quite different from the elegantly shaped hands on Pl. XVI a. Between the hands are some

[1] Among the rich and variegated rock carvings in the Swedish province of Östergötland there are a few elements resembling these short and broad hands. Otherwise hand pictures seem to be missing in Sweden. They have been interpreted by NORDÉN as footprints, probably of bears (Nordén Fig. 46 and Pl. 38). The claws of these "bear's feet" are much shorter than the fingers on our hands, and I therefore prefer to call our figures hands, though they are far from naturalistic.

geometrical lines forming an open enclosure, a trident-shaped figure, a ring with a central dot and some unclear lines. The lower edge lies about 1.5 m. above the brook, the height of the carved surface being 1.9 m. The lines are broad and shallow.

The filling with white colour does not always do full justice to the engravings, as all the pictures have become equally white. In reality they are of different shades. The elements of the highest level have, however, a homogeneous appearance. Not so the other parts. Some other visitor who cares to undertake the labour of filling in the pictures will no doubt arrive at a different number, because I did not fill in the most uncertain ones, and as I worked in November the light was not always of the best. Even on some of the photos I can now discern animal figures which I have not filled in with white. In any case they give nothing but a quantitative addition.

Having finished the description of the pictures on the cliff, we now turn to those on three large boulders lying a little upstream on the other side of the brook.

The first boulder lies close to the water and has one side covered with a confusion of obscure carvings where only one camel and some curved ibex-horns could be distinguished. Two "elfin mills", i. e. small cup-shaped hollows, were clearly defined. Under better light conditions these figures may stand out more clearly. In November the sun never reached this block.

The middle boulder has a carving which is distinct at both ends, whereas the centre is impossible to interpret. To the left is a man, one hand stretched out to grasp the tail of or to carry a big bird (?) with hanging wings and raised head. The right extremity shows a deer, a camel, a crane, and a walking man. In the centre there may be, among other things, a man and a couple of camels.

The lines are thick and the broader surfaces of the figures are hollowed out. This carving makes a modern impression. The animals recall some of the middle level on the main engraving, but the movements of the human figures are much more lively. This carving seems to correspond, in point of style, to the one from Langar-kisht on the Panja in the Pamirs (Tallgren 1933, Fig. 17).

The third boulder, finally, has a few engravings as shown on Pl. XVIII c: three hands and some incomplete elements, one of which may be an animal.

These stone blocks must have been hidden in the detritus which covered the lower part of the cliff when the upper level of its pictures were engraved, and the pictures on the blocks must therefore be younger than this oldest facies. To make any further chronological distinction is difficult, but it may be added that the figures on the central boulder look relatively fresh whereas the others are weathered.

*

For those seeking the explanation of this extended rock carving at Buyantu-bulaq in Quruq-tagh, Prof. TALLGREN's paper in ESA 1933 affords excellent

guidance. The centre for the Inner Asiatic rock carvings is the Sayan mountains, i. e. Uryangkhai (Tanu-tuwa) and the South Siberian district of Minusinsk. According to TALLGREN's map the nearest rock picture to that of Quruq-tagh is situated some 700 km. to the north of it at Kurchum in southern Altai. To the southwest none has been found nearer than Ladakh 1300 km. away. To the east, a group of rock carvings which I studied in Lang-shan lies about 1700 km. away (Bergman 1935 a, Fig. 6). The nearest is situated about 360 km. to the SSE and was discovered by Dr. HEDIN in 1901.[1]

The Quruq-tagh rock carving therefore occupies a most important geographical position, forming a link between rock pictures at tremendous distances.

The main features of the topographical position which might have any bearing on the carving are the following: proximity to water, vegetation and good hunting grounds. The water now washes the very rock, the vegetation is luxurious but, as the valley is narrow, insufficient to feed any large heards. The hunting in Quruq-tagh is good. Another important feature is that a road or at least a path passes the place. Most of these characteristics are also typical for the rock-pictures in N. Mongolia and S. Siberia. If we turn to the subject-matter of our petroglyph we also find analogies on many other Asiatic rock pictures.

As already mentioned, the animal representations form the major part of the Quruq-tagh petroglyph, and most of the figures no doubt represent wild animals such as ibex, antelope, deer, i. e. members of the local fauna. It is somewhat uncertain if the camels are meant to be wild or domesticated, especially as the eastern Quruq-tagh is one of the few places where wild camels exist. As the humps are drawn very high, indeed, exaggeratedly so, and wild camels never grow fat enough to develop anything like erect humps, the pictures most likely show domesticated camels. Only one or two of them have a rider.

Most of the horses have riders. Among the confusion of separate figures without any obvious connection there may be a couple of real scenes: the two riders with dogs (or colts?) following, the mounted man driving two horses (below the trees) and the two men each clutching the tail of a goat-like animal. There are no love scenes such as abound on e. g. Scandinavian rock pictures, only one man is ithyphallic, and only one has his sex marked in the same way as several figures of the Sulek engraving (Tallgren 1933, Fig. 11; this part of the Sulek rock picture shows several analogies with the older facies of our petroglyph though the number of men and beasts are in inverse proportions).

The trees are possibly the tree of life or the tree of the world, the hands, the feet,

[1] It is situated in the Kalta-alaqan-tagh about 140 km. SSE of Charkhliq and is published in Hedin 1905 Vol. 3, pp. 189—191, Figs. 154—157, and consists of a few hunting scenes with various animals. The hunters carry bow and arrow, and are partly on foot. According to HEDIN the figures are naturalistic and executed with an iron chisel. Most of the pictures have contour lines only. HEDIN ascribes them to some Mongol hunters, or, though less plausibly, to pilgrims.

the "elfin mills" and probably some of the undecipherable signs are purely magical. The oldest level has the most varied subject-matter, and it seems as if this level covered a wider range of conceptions than the rest. Otherwise we have no doubt to deal with imititative magic and especially hunting magic. The hunters passing here have drawn the outline of their game on the rock, by which action they got power over the animal in question and would be successful on their hunting-expedition. TALLGREN writes: "The primitive rock-pictures in Northern Central Asia express, I suppose, an idea which once prevailed among the Eurasian peoples of the Old Stone Age, and which still lives among the primitive hunters in the Siberian Taiga and on the mountain chains of Central Asia. The pictures of this really "timeless" culture have been executed by pocking or painting. The main elements in its repertory are animals and conventionalized men, worked in the same manner as in the corresponding late rock pictures in Africa, Spain, Arctic Scandinavia and among all primitive hunting nomads in general. It must be noticed, however, that the Central Asian rock pictures of the primitive group are seldom naturalistic or lifelike. They are mostly conventional, being products of a "frosen" shamanism rather than of a hunter's imagination, as the Palaeolithic pictures are. In Siberia we have to do with an inherited art, not with one which depends on the personal observations of the painter."

How far our carving can be labelled as an inherited art is hard to tell, but it obviously has connections with the Siberian and Mongolian rock pictures, above all with the group that TALLGREN calls the primitive. There is, however, one difference in the subject-matter of the Siberian-Mongolian rock carvings and the one in Quruq-tagh. The latter contains several incised hands, whereas this element seems to be lacking among the former groups. I have not been able to trace any hands in the publications of Siberian and Mongolian rock pictures available to me, and Prof. TALLGREN of Helsingfors, the famous specialist on the prehistory of these regions, has kindly confirmed this observation. Otherwise the pictures of hands have a very wide distribution. On the Panja rock pictures there are hands, both large naturalistic ones (Tallgren 1933, Fig. 19) and short and broad ones executed in the same stylized manner as are some of the Quruq-tagh hands (Tallgren 1933, Fig. 17, our Pl. XVII b). Exactly the same curious shape is found on an Indian seal from Barenrah, Hamipur (Wilke 1913, Fig. 210 b) and on one of the Lang-shan carvings (Bergman 1935 a. Fig. 6). Some of the hands in our carving have only four, or even three fingers, but it is far from certain that they are meant to represent mutilated hands. The general meaning of the hands is explained as apotropaic gestures; in other instances they are interpreted as symbols of proprietorship and as means of keeping possession when they are over or next to animal figures. This latter explanation would fit in perfectly with the general meaning ascribed to the other elements, and on Pl. XVI a a little to the left of the centre there is a hand covering a part of an animal, though this is incomplete, only the hind part being executed.

After all, the hands on the Quruq-tagh petroglyph show connections with the south-west and the south and not with the north.

Stylistically the majority of the animals are poorly executed; they are stiff, and outlined in profile. Some of the human figures are seen *en face*. The "artists" have been most successful in depicting ibex bucks, some of them being highly suggestive and recalling the best ibex representations in the Ordos bronze art. A mounted horse is shown at the trot, and an antelope is also depicted in lively movement. Though the rest of the horses are stiffly drawn, their movements have been emphasized by the position of the riders. With one hand they hold the reins and with the other they whip their small, long-tailed mounts. Everybody who has been fortunate enough to see a Mongol hurrying across the wide spaces of the steppes at a joyful speed, riding his pony in the way peculiar to these people, with his bodily weight on one thigh, and urging his mount by touching the rear of its hind-quarters with the whip, will understand that the simple rock-picture horsemen are founded on observations of nature.

The occurrence of domesticated animals among the wild ones shows that the makers of the pictures relied not only on hunting, but also on cattle breeding. In this instance the making of the pictures had the object of increasing the number of cattle.

Whether the Mongols of our days who made the horses and camels on the lowest level were moved by the same wish, or whether they just wanted to show their superior ability in drawing is hard to say. They have in any case felt an attraction to this old place of primitive worship, regarding it as "powerful" and sacred and therefore enriching it both with animals and lamaistic signs. STEIN also mentions that local worship of some kind attaches to the spot in another way: he saw a flag which a Mongol visitor had set up near the rock pictures.

It is, of course, impossible to answer the question as to whether there exists an unbroken local tradition here. There may be several hiatuses in the genesis of the engravings, as there are rather well-marked generations. Different tribes may indeed be responsible for different parts of the petroglyph, but the conception underlying these manifestations is the same.

The chronology of primitive petroglyphs is always hard to decide. For the S. Siberian and N. Mongolian rock pictures TALLGREN gives the probable limits as B. C. 500—A. D. 800. The rock pictures of Ladakh and W. Tibet are of varying dates. The qualifications for very early pictures exist, if we can rely on the palaeolithic age ascribed to some rock paintings in NW India. The rock carvings along the different routes connecting India with the Tarim and the Oxus Basins are in many cases of a Buddhist character: stupa representations and a few lines of script. Some of them can be dated in the third, others in the fifth, eighth or ninth centuries A. D. In some instances such Buddhist rock carvings are combined with human

figures, animals and geometrical signs executed in a true primitive way (Cf. Benveniste Pl. V). It is not possible to determine in all cases whether the various types of figures are contemporary or whether they are the results of successive use of the spots as sacred places. In many instances the Buddhist stupa carvings seem to form the primary element of the compositions which has attracted people and inspired them to make additions. These carvings are often labelled as pilgrims' pictures. On the other hand there are also rock pictures in Western Tibet lacking the Buddhist elements (e. g. Tucci, Fig. 21) which are of the same type as the older parts of the Quruq-tagh petroglyph.

FRANCKE gives an explanation of the meaning of recent rock pictures in Kashmir-Ladakh which totally differs from the generally accepted interpretations of at least old rock carvings. The many bucks, e. g. on a rock surface at the village Donga near Shimsha Kharbu about midway between Srinagar and Leh, are said to be offerings to the mythical pre-Buddhistic King KESAR, made in gratitude for the birth of children (Francke Pl. 9).

Through the good offices of Mr. HENNING HASLUND-CHRISTENSEN I have come into possession of a photo of this rock carving. On the left-hand part of the large boulder the photo clearly shows two more bucks than appear in FRANCKE's reproduction. (The figures are not filled in with white colour on either picture). This proves that the people still embellish this rock with carvings of the same kind as those already existing. On this petroglyph only the Buddhistic stupa symbols may be of some age. The present inhabitants of the Donga village are Mohammedans and have nothing to do with the carvings.

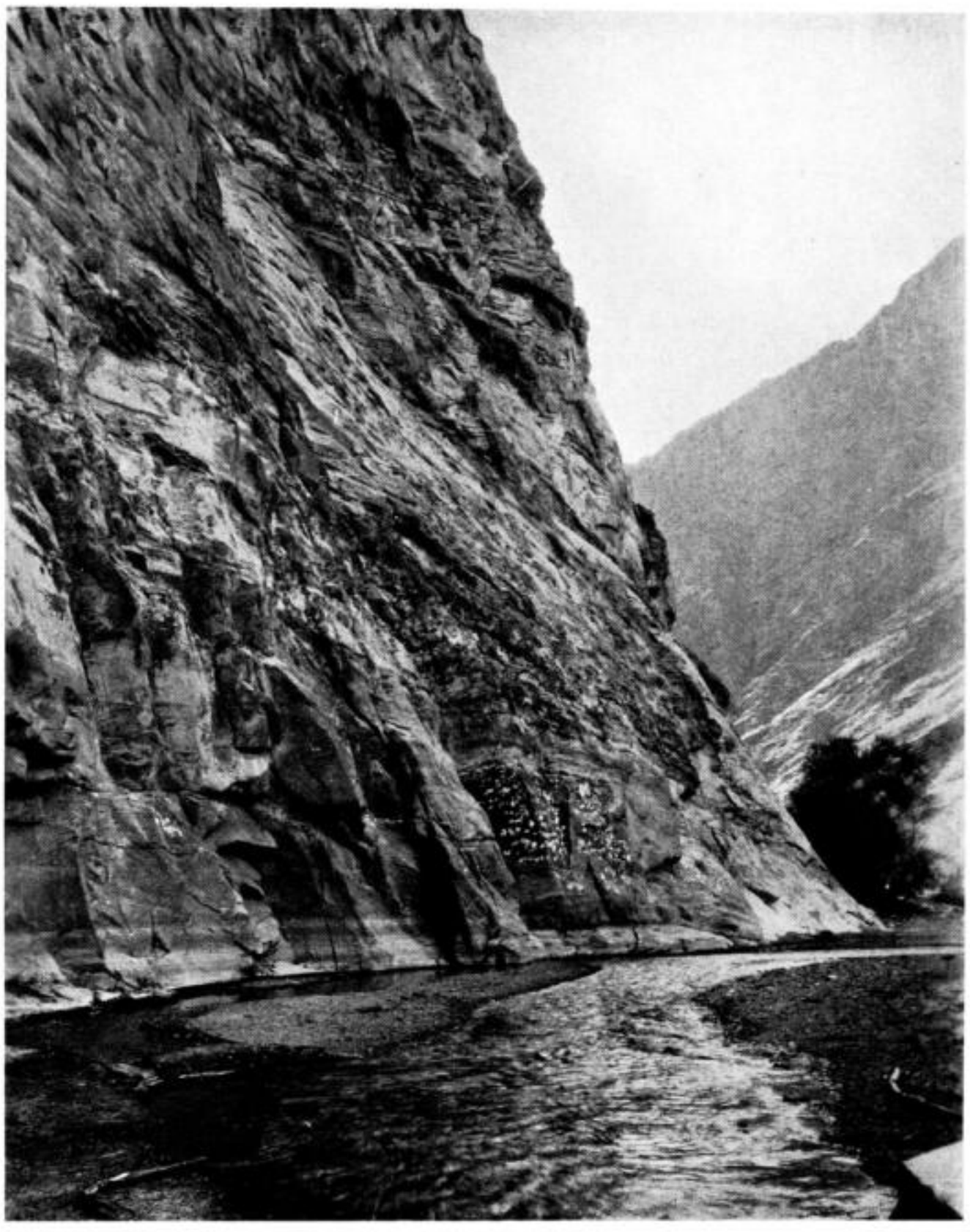
In another case FRANCKE calls an ibex representation "the old big stone-buck, personification of the rock".

According to my belief not all of FRANCKE's buck figures must necessarily be connected with human fecundity. When two goats are depicted, one of them with a small goat within, denoting pregnancy, this is better explained as a prayer for increase in the stock of goats.

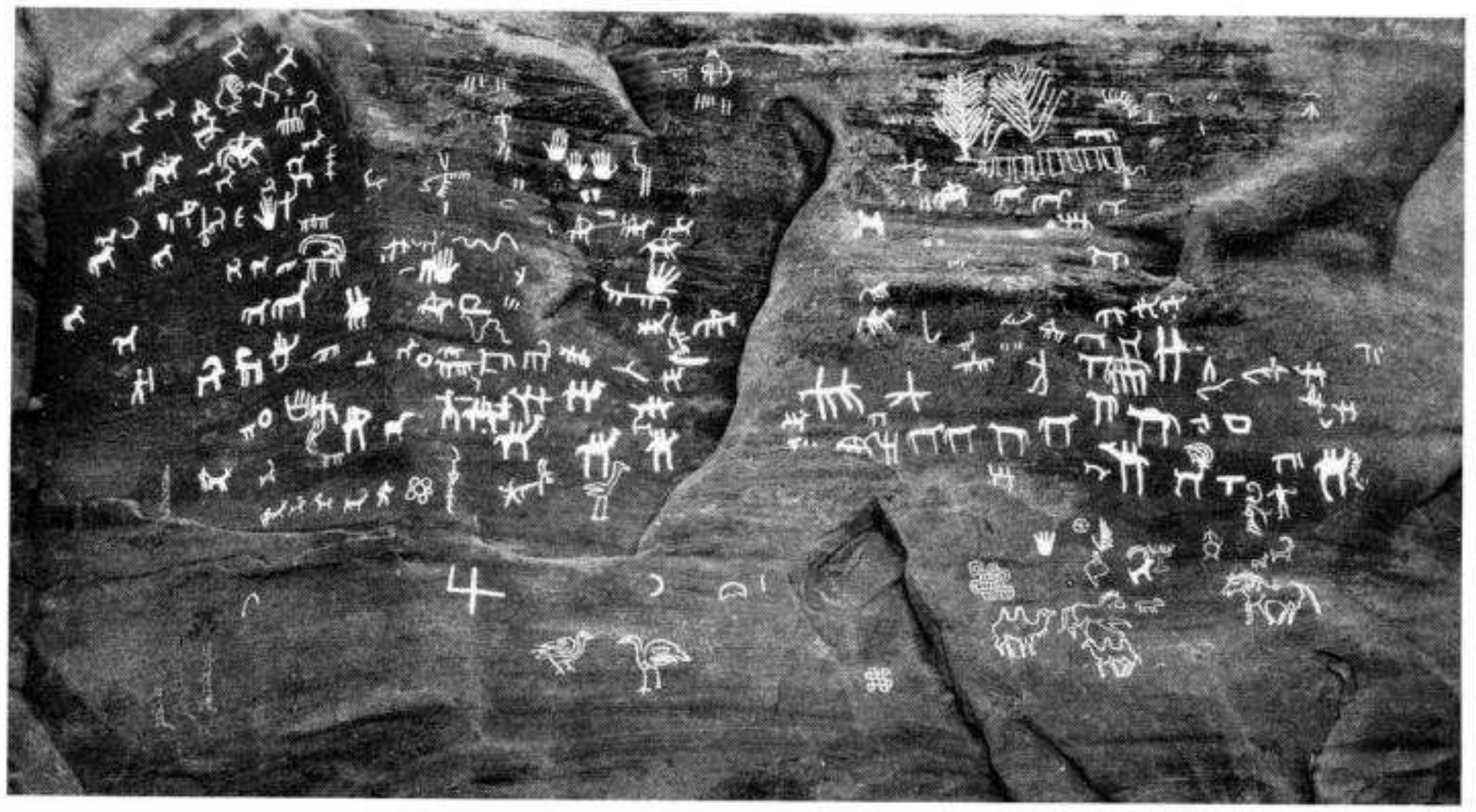
A carved hand FRANCKE calls a sign of Wednesday.

As is evident from the description given above, our Quruq-tagh engravings come down to modern times, maybe the present century. The "stratigraphy" shows that the highest level must be of a certain antiquity. The origin of the art is no doubt very old, but in our case the earliest part must have been made by a people well aquainted with the use of metal tools. To give any more precise date would be hazardous. One could, of course venture the guess that the carving was started by some Huns coming from Northern Mongolia, where they probably practised this kind of art, and that it was continued by some people associated with the southwest, e.g. the Tibetans, and also by the Mongols.

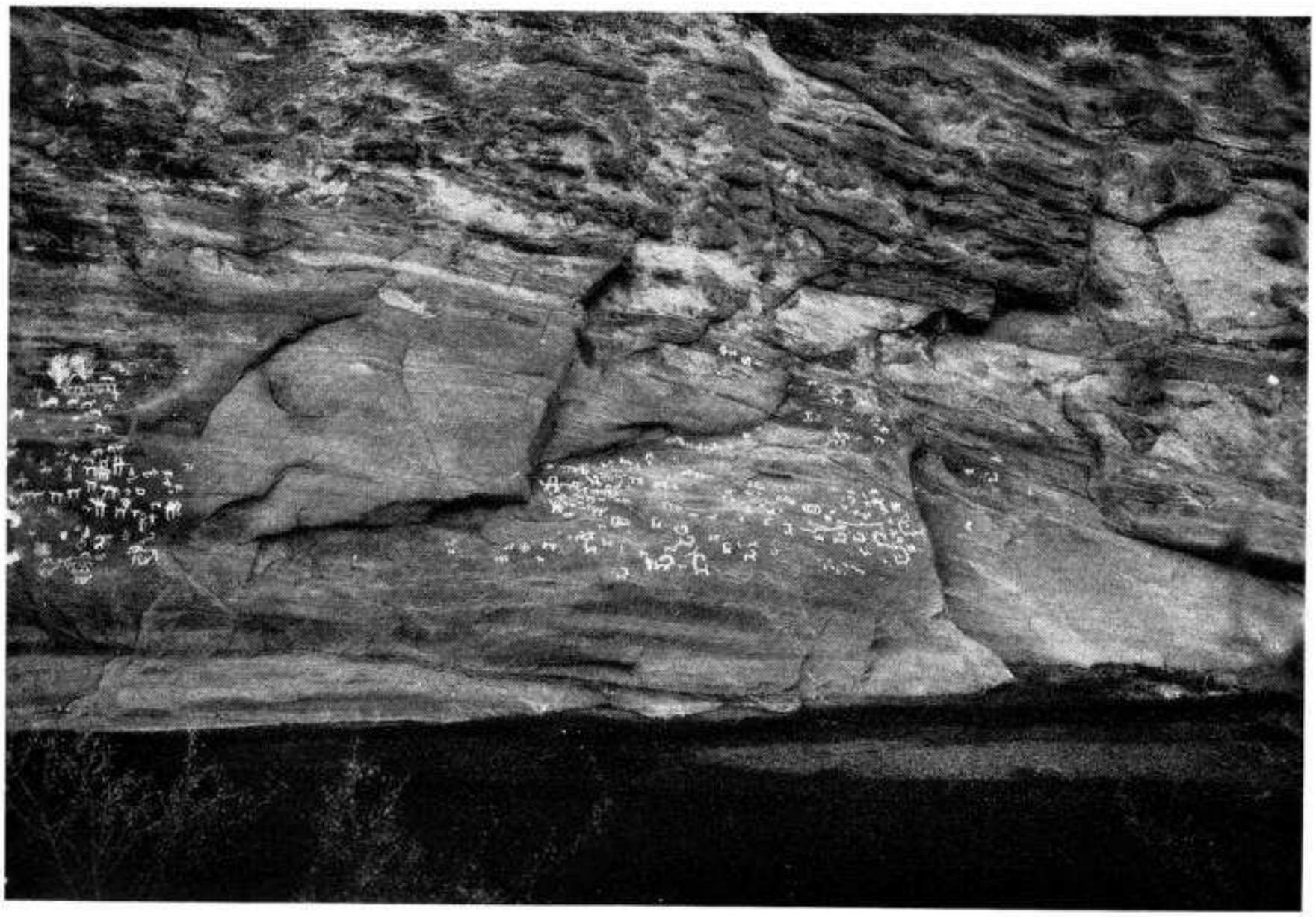
It is still too early to base any conclusions on the distribution of rock-carvings in



General view of the cliff with the rock carving, Buyantu-bulaq, Quruq-tagh.



a. The central group of the rock carving, with three "strata".



b. The right part of the central group and the whole third group.

Inner Asia. The development of this art is dependent on the presence or absence of rock faces suitable for the reception of the figures. Thus it is hopeless to expect to find any rock pictures in the granite hills in regions with desert climate, as the surface of this kind of rock is much weathered and easily peels off.

2. SHINDI.

A. Watch-station.

On the top of a small hill at the mouth of the Shindi river or Buyantu-bulaq there are some very small remains of a watch-tower guarding the entrance to the valley from the north. STEIN has already observed this small ruin. At the foot of the hill, on the SW side, there are traces of quarters. A square wall, totally covered by earth, is 4×4.7 m. At a depth of 50 cm. there was a layer containing few pieces of charcoal, animal bones and horse droppings. The walls had been built of brushwood. Several houses were lying close together. In one room were found remains of the fallen-in reed roofing, and a hearth made of three stones placed edgewise, filled with charcoal and ashes. Some cows' bones were also found in this room.

When studying a photo of the place I discerned a low rampart surrounding the whole place to form a compound. This wall is so low and decayed that I did not notice it when on the spot.

B. "Tash-öi".

High up on the mountain-side to the west of the Shindi river and not very far south of the village, ABDURAHIM showed me a 'Tash-öi' (stone hut). The main structure is shown in Pl. XIX b. As seen on the plan Fig. 38 it consists of a rectangular enclosure, open towards the precipice on the eastern side. A smaller room, which has the south wall common with the enclosure, has about one metre high walls of slate slabs joined with mortar. The outer wall is a dry-stone wall. Inside the door at the eastern side of the room there was a hearth of small stones and earth, 23 cm. in diam. and about 25 cm. below the surface. The loessic earth was intermixed with ashes to a depth of 70 cm., and also contained a few animal bones.

In front of this main structure but about 8 m. below the SE corner there is a small outwork. About 40 m. east of the main structure and about 15 m. below there are remains of a shelter with two (three?) rooms in a row, close to a steep cliff. Here I found a couple of potsherds in a layer of ashes, charcoal and animal bones which reached 50 cm. below the floor.

On a level with this house and straight below the outwork mentioned above I saw some remains of masonry strengthened with logs and branches.

Fig. 38. Plan of "tash-öi" near Shindi, Quruq-tagh. Complete and broken hatchings denote standing and fallen down masonry respectively.

It is almost impossible to determine the age of these stone houses only from the potsherds found. Their position high above the ground with a fine prospect along the river valley made them very suitable as look-outs, and it is possible that they were constructed in connection with the watch-tower at the mouth of the valley described above. It is a priori very reasonable to suppose that all these structures in the valley of the Shindi river were erected, or at least inspired, by the Chinese to safeguard the traffic on the Silk Road passing not very far to the south of the Quruq-tagh range.

C. Grave near Shindi.

When at Shindi with NORIN, in November 1928, I examined a grave about 3 km. to the east of the village. It was situated on a small elevation near NORIN's point 1561 (cf. sheet Shindi of NORIN's map), and consisted of a rectangle measuring 5×6 m. with an outer and an inner wall of stones, and between these a filling of gravel. Half a metre of loessic earth covered an irregular layer of smaller slabs, and below this we found some remains of a very much decayed human skeleton. The left arm was lying higher than the traces of the skull. 20 cm. to the left of the skull there was a lower jaw of a sheep. This formed the only funeral deposit. Immediately below this we came upon rock.

The grave was of course measured, but the plan was lost in Siberia together with many other more valuable data. I am therefore unable to state with certainty in which direction the skeleton was resting, but as far as I can recollect the head was lying to the west.

Even this stone grave ABDURAHIM called a Tash-öi though it made no real impression of having been a house.

3. SÖGET-BULAQ.

A. Ruined fortress.

When travelling from Korla to Shindi, in October 1928, I took the road via Sai-cheke at Könche-darya through the narrow mountain valley Söget-bulaq. The reason why I chose this route was that my guide URAYIM (= IBRAHIM) from Shinega informed me that there was a "Kohna-shahr" in the Söget-bulaq valley. After having proceeded 9.5 km. northwards (measured in a straight line) from the southern foot of Quruq-tagh we also reached a ruined fortress on the western side of the valley, where it forms a marked bend and is wider than elsewhere.

The structure is situated on the top of a small but very steep hill, the walls of the fortress following the irregular shape of the hill, Fig. 39.[1] It measures roughly 50×30 m. The walls are built of slabs with mortar. As seen in Pl. XIXa parts of the masonry have fallen down. The walls do not exceed 4 m. in height. The interior makes more the impression of a platform than of an enclosure. There is only one gate, situated in the southern part on a narrow promontory. Here the walls are higher but also thinner. On the eastern side an inlet between two promontories has been closed by a low wall thus forming a lower bastion.

Only a couple of undecorated potsherds were picked up inside the fortress. Below the rampart we found the bronze pendant Pl. 15:3, in the shape of a very stylized animal representation, a ram, the horns forming the suspension loops. There are pendants among the Ordos bronzes with similar conceptions of the animal.

These meagre finds do not furnish any definite chronological clue. Considering the general situation of the fortress, it is evident that it was constructed to control traffic from North to South or vice-versa, and it was most likely built to block this mountain road from invasions from the north. When traffic on the Silk Road, or more precisely The Road of the Centre, was flourishing it was certainly very necessary to protect this east-westerly route from flank attacks, and in this part especially from the north. The Silk Road here followed the line of watch-towers between Ying-p'an and Korla, a line that is easily reached from the Quruq-tagh mountains. It is therefore reasonable to suggest that the Söget-bulaq fortress was built at the time when the trade along the Silk Road was lively and when the Chinese still feared inroads from the Hsiung-nu.

The Söget-bulaq fortress may also have been constructed to protect one of the roads to the kingdom of Shan, a small state mentioned in the Former Han annals and located in western Quruq-tagh. This explanation, however, is less probable as this kingdom can hardly have been of much consequence. The name Mo-shan mentioned by LI TAO-YÜAN probably refers to the same territory.

[1] The contours on the plan are not measured and the intervals are thus very approximate; they do not reach the foot of the hill.

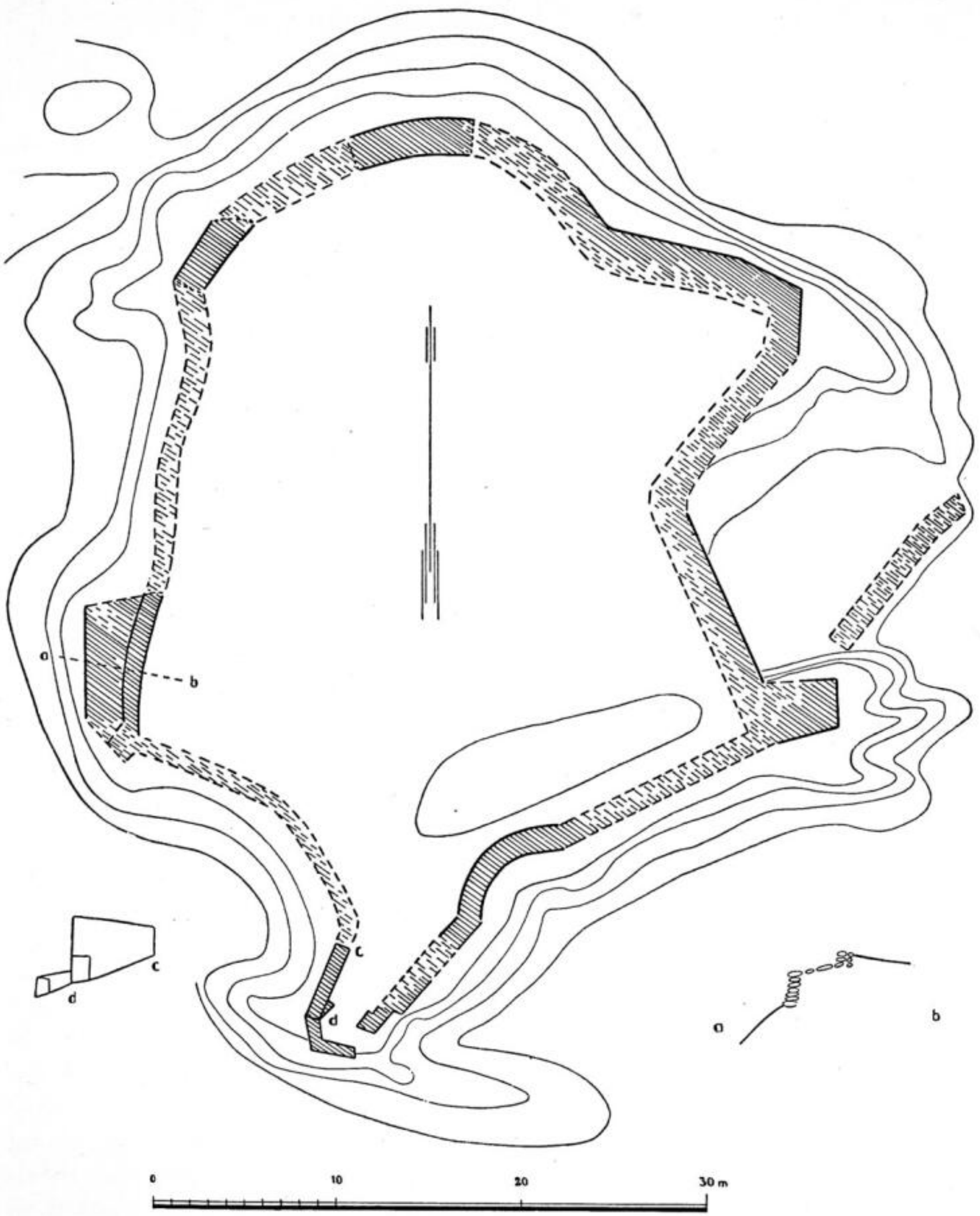


Fig. 39. Sketch plan of ruined fortress in the valley of Söget-bulaq, Quruq-tagh. The complete and broken hatchings denote preserved and fallen down masonry respectively.

Some of NORIN's graves and 'tash-öis' may have some connection with this ancient kingdom.

This fortification ought to be seen in connection with those at the Shindi river and the fortress at P'o-ch'eng-tze in Quruq-tagh.

B. Burial place.

Between the fortress and the small brook there is a group of eight closely placed graves built of stone slabs placed in rectangles. Seven of them were destroyed by man, the one which seemed to be untouched I excavated. Plan and section are shown on Fig. 40. The rectangle is lined with slabs put edgewise. It measures 2.3 × 1.2 m., and is about 35 cm. higher than the ground. Level with the ground there was a layer of flat slabs. Nearly in the centre and 1 m. from the top a human skull was found, and a little higher up and to the side was a child's skull. Near the adult skull there was some green colour from some trifling much decayed bronze plate. As no other bones or funeral deposit were met with it is most likely that this tomb, too, had been subject to a previous search.

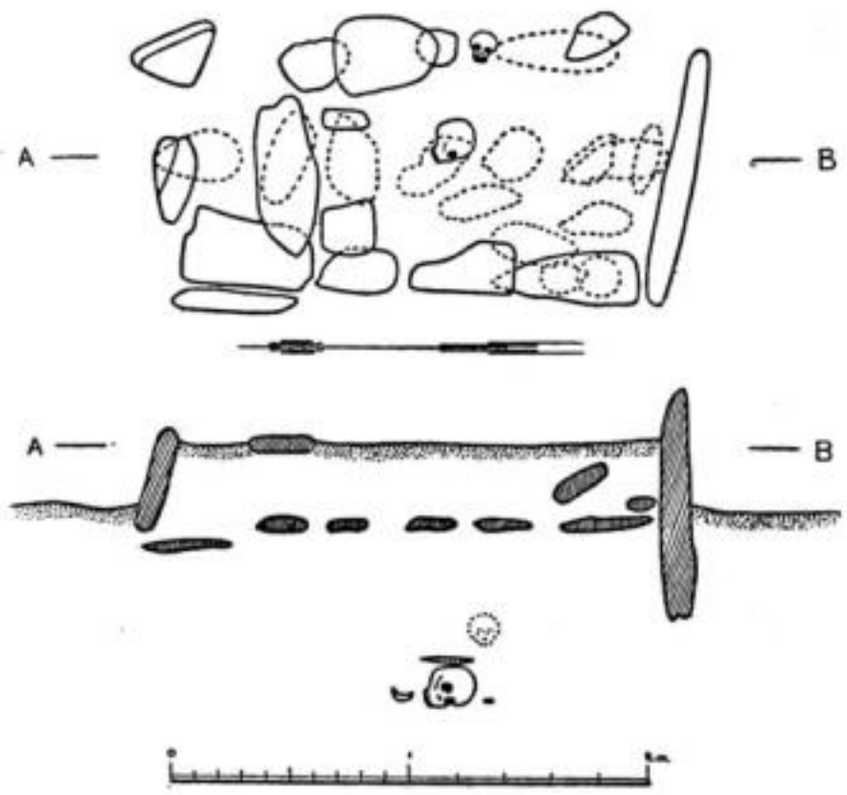


Fig. 40. Grave near the ruined fortress at Söget-bulaq. Plan and section.

The fragmentary skulls have been handed over to Prof. BACKMAN.

4. GRAVE AT SHOR-TSAGHAN.

When making his topographical and geological surveys of western Quruq-tagh, NORIN discovered a great many ancient tombs and remains of small stone structures, which have been marked on his maps. The Turki name for all the different kinds of these remains built of stones is Tash-öi, 'stone house', or Degipter-tash-öi, 'stone huts of the spirits' (Norin p. 176). In some cases these structures served as dwellings and sheep enclosures, in other cases they were small fortifications or watch-stations. HUNTINGTON mentions them as "little stone shepherd's huts".

Along the northern foot of Khara-teken-ola, south of the lake Baghrash-köl, both such structures and ancient graves are very common. NORIN opened a grave in the region of Shor-tsaghan near his camp 201. It consisted of a mound of earth and stones in which he found a chamber measuring 2 × 1 m., walled with rough stones and about 1 m. deep, which was filled with fine sand and stones. At the bottom rested the



Fig. 41. Grave at Yukken-gol, Quruq-tagh. Drawing from a photo by Dr. E. Norin.

strongly decayed remains of a human skeleton with the head eastwards, and at its feet some fragments of a sheep's skull. The iron objects marked in the list below were recovered from here. They are all very much decayed and broken. There was a horse's bit with a joint at the centre and a ring at each end, an oval ring with a projecting hook i. e. probably a buckle of the nomad style, and some indeterminable fragments.

It is impossible to date these fragments with any certainty. It seems likely, however, that they belong to the first millenium A. D.

*

Another grave found by NORIN is shown in Fig. 41. It is situated at Yukken-gol 600 m. due east of his camp 29 (cf. NORIN's map Sheet Shindi). It consists of a rectangle, about 4 × 6 m., of slabs placed edgewise, and reminds one of certain stone graves in Inner Mongolia.

It is still too early to ascribe the Quruq-tagh graves to definite periods. They have probably been constructed in various ages and also by different peoples. Those coming inte the question are Huns, Avars, Turks, and Mongols. At all events these tombs must be anterior to the time when Islam asserted itself among the Turks and before Lamaism came to govern the minds and customs of the Mongols.

DESCRIPTIVE LIST OF OBJECTS FROM QURUQ-TAGH SITES

Shindi. From a ruined "tash öi."

K. 13438: 1. Potsherd from the projecting rim of a fairly large jar. Reddish-brown, hard-burnt ware. Diam. of mouth has been 22.5 cm.

K. 13438: 2-4. Three potsherds from fairly large vessels. About the same ware as —: 1 but with yellow surface.

K. 13438: 5-6. Various small bones, teeth, coal etc.

Söget-bulaq.

K. 13440: 1. Bronze pendant? with two circular loops (one broken off) at one end. The whole object is possibly a stylized animal representation. L. 55 mm. Pl. 15: 3.

K. 13440: 2-3. Two potsherds of coarse red-brown ware. Found inside the fortress.

K. 13440: 4-5. Two small potsherds of reddish ware. —: 5 has a black line painted on a dark-red slip. Found at the graves between the fortress and the brook.

Shor-tsaghan, tomb excavated by Norin in the region S of lake Baghrash-köl.

K. 13445: 1-2. Two fragm. of an iron bridle, which has had a joint at the centre and a ring at each end.

K. 13445: 3-4. Two small iron fragm. with a hole.

K. 13445: 5. Iron buckle. An oval ring with a projecting hook instead of a tongue. 25×23 mm.

K. 13445: 6-7. Two small iron fragm., probably from rings.

K. 13445: 8. A few fragm. from a much-decayed iron sheet with two perforations. Br. 55 mm.

K. 13445: 9. Human incisor.

5. RUINS IN THE QARA-SHAHR REGION.

A. MING-ÖI.

In the early autum of 1928 I travelled from Charkhliq to Quruq-tagh. As the ferry-place near Ying-p'an was difficult to traverse with camels because of the high water in Qum-darya I followed the main road from Tikenliq to Korla. From there I paid a short visit to the imposing ruins of the once Buddhist monastery which is now called Ming-öi and situated near to the west of the road between Korla and Qara-shahr. On the other side of the road and a little further to the north lies the ruined town of Baghdad-shahri, which I also visited.

I had not planned to undertake any excavation at either place, as the first one was well known through the intensive work by OLDENBURG, GRÜNWEDEL and STEIN, and the latter had proved to STEIN to be very unpromising.

From one of the central ruins in Ming-öi I brought away the two Buddhistic stucco heads Pl. 32: 9 and 11, and a few trifling objects were collected from the ground. One of these was apparently lost by STEIN, as it bears his site marks. The heads are very close to those found by STEIN in this eighth century monastry.

B. BAGHDAD-SHAHRI.

After having left Ming-öi I paid a flying visit to the ruined town called Baghdad-shahri. All that remains of it is the decayed walls. At the large mound in the interior some local treasure-seekers were digging, but they had made no interesting finds. We found a fragmentary Chinese coin on the ground, most likely a K'ai-yüan issue of T'ang period.

STEIN has identified this site with the old capital of Yen-ch'i, which the T'ang annals place at the right side of Khaidu-gol.[1] STEIN's identification is rendered less certain by my discovery of the ruined walls of another city very near to Baghdad-shahri which I made six years after my visit to this place.

[1] This is the spelling usually applied to the Mongol name of the Qara-shahr-darya. I have never heard it pronounced by any Mongol. According to Mr. UNKRIG it must be a corruption of Khoitu-gol, i. e. The river in the rear, or to the north.

C. RUIN NEAR BAGHDAD-SHAHRI.

When travelling from Qara-shahr to Korla, in March 1934, I observed the ruins of a rather large enclosure suggesting a town wall. It was situated about 3 km. N of the village Danzil, and about 1,500 m. from the ruined town of Baghdad-shahri. The compass bearings from the northern "gate" towards the corner-towers of Baghdad-shahri were: NE corner S 71° E, SW corner S 45° E.

The cart-road crosses the northern wall, where a plain and quite modern p'ai-lou has been erected, and follows the eastern side of an inner square, Fig. 42. According to my estimation, which must be regarded as only approximate, the sides of the outer wall measure roughly 600 m. and are 2—3 m. high. On the southern side I saw no traces of any wall. The sides of the inner square measured about 250 m. Along the inside of its eastern wall ran a rather solid brick wall about 4 m. high. The inner enclosure contains several low mounds of dilapidate structures.

The whole "town" is covered with a thorny shrub vegetation, and the ground is salt-encrusted, as is also the case with the surroundings. A small water-course flows through the ruin. The moistness and salinity of the ground makes it less probable that any perishables can be preserved here.

Whether this ruin or Baghdad-shahri was identical with the Yen-ch'i of the T'ang annals is impossible to decide. One of them most likely was Yen-ch'i, and the other may have been A-ch'i-ni (Agni) of HSÜANG TSANG or Wu-i (Wu-ch'i) of FA HSIEN, because it is uncertain if these three names denoted one and the same place.

However this may be, both of these ruins occupied an important strategical position along the highway between Turfan and the Tarim Basin, and also on the mountain road from the Ili valley along the Qara-shahr river where nomad inroads could be expected.

*

In this connection we might mention a few objects obtained by Dr. NILS AMBOLT from local people who had found them when digging up roots for fuel at a place about 6 km. SW of the village Danzil between Baghdad-shahri and Ming-öi.

Two Chinese coins are from the periods corresponding to 766—784, a third is so covered with verdigris that the inscription is illegible. Pl. 15:6 shows one side of a Sino-Kharoshthi coin. The Chinese characters are very unshapely and irregular; they read apparently *liu ch'u ch'ien,* i. e. six ch'u (= a weight) of money. This side nearly coincides with Hoernle 1899, Pl. I: 14. The other side is still more obscure. It probably shows a horse standing to the right, and a couple of nearly effaced square characters. It recalls Hoernle's Pl. 1:8. No. —: 5 is most likely of the same sort of Indo-Chinese coins. According to HOERNLE, these coins date from the first and second centuries A. D. To similar coins from Khotan, where they seem to have been issued, he assigns the period 73—200 A. D. as a safe date.

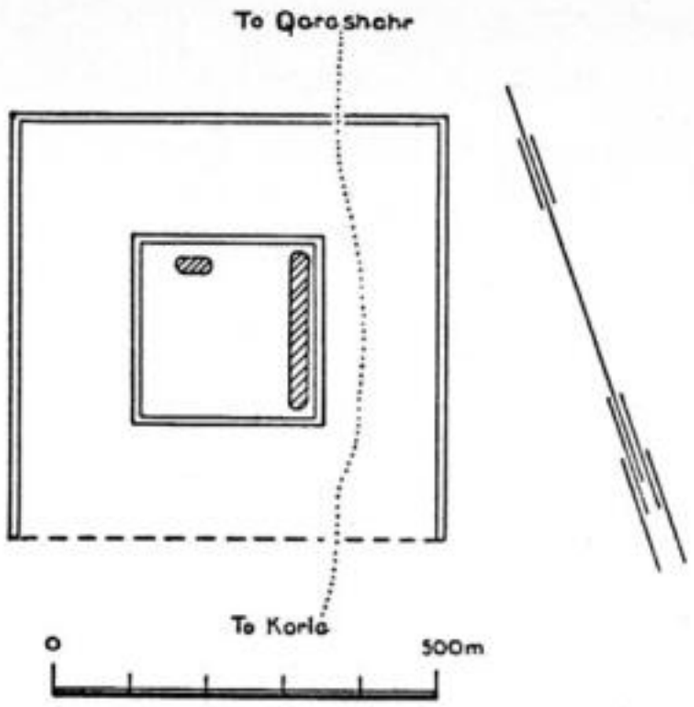


Fig. 42. Approximate plan of ruined city between Qara-shahr and Korla. Hatching = masonry.

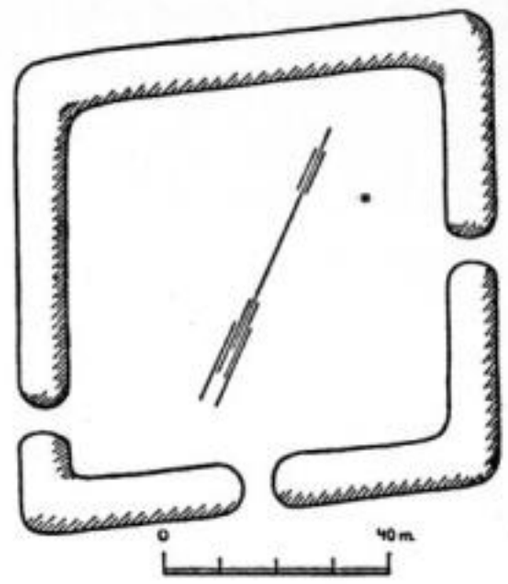


Fig. 43. Earth rampart at Qumush, Quruq-tagh. Approximate plan.

The flat bronze button Pl. 15:14 is harder to place, but the strap end Pl. 15:5 can be compared with Arne 1914 Fig. 228, which was found in Qara-khoja near Turfan and is ascribed to a post-Sassanian period. The relief decoration shows affinities with Hungarian strap fittings of the migration period. (HAMPEL's fourth group).

With the exception of the two Sino-Kharoshthi coins, these objects seem to be from the time during the T'ang dynasty when this region saw heavy traffic and a colourful life in the now ruined monasteries.

LIST OF ANTIQUITIES FROM THE QARA-SHAHR REGION

Ming-öi.

K. 13442:1. Three joined fragm. of a small clay vessel of light-red ware and with dark-red painting.

K. 13442:2. About half of a small low lamp of earthenware. Diam. 5.5 cm.

K. 13442:3. Small potsherd with two black lines. Light yellowish, hard-burnt ware.

K. 13442:4. Small fragm. of ornament of burnt clay, probably from a sculpture. (Marked Mi. xi, apparently dropped by Stein.)

K. 13442:5. Stucco relief head, the upper part missing. Nearly full size. The arched eyebrows run down into the very sharp-edged nose. Half-closed eyes, but with large swelling eyeballs. Short upper lip, small much-curved mouth. Straight chin with double chin marked below. Pl. 32:9.

K. 13442:6. Stucco relief head, much decayed. About half life-size. The hair is parted by a horizontal ribbon, the lower part having the coils laid against the sides. The ear-lobes are somewhat elongated. Pl. 32:11.

Baghdad-shahri.

K. 13444:1. Small fragm. of Chinese coin with the character "yüan" below the hole. Probably a K'ai-yüan.

K. 13444:2. Sawn-off point of a horn-core.

K. 13444:3-4. Two small chips of black flint.

Danzil.

K. 13443:1. Chinese coin, Ta-li-yüan-pao (766-780). Diam. 21 mm.

K. 13443:2. Chinese coin, with unclear legend, probably Chien-chung-t'ung-pao (780-784). Diam. 21 mm.

K. 13443:3. Chinese coin, much corroded, broken. Diam. 22 mm.

K. 13443:4. Copper coin, Sino-Kharoshthi, with unclear Chinese legend on one side, the front part of a horse standing to right and part of legend on the other side. Diam. about 19 mm. Pl. 15:6.

K. 13443:5. Copper coin, probably Sino-Kharoshthi, with very unclear legend. Diam. 16 mm.

K. 13443:6. Flat bronze button with incised ornament on one side. Diam. 18 mm. Pl. 15:14.

K. 13443:7. Bronze mounting for strap end. One side is ornamented in relief: a floral design framed by a single row of dots between raised borders. The plain rear side is fastened with two rivets. 20×14×5 mm. Pl. 15:5.

6. RUIN AT QUMUSH.

When travelling along the main road from Turfan to Qara-shahr in February 1934, one night was spent in the then destroyed and deserted village of Qumush. On the south-eastern side of the small village I discovered a rhomboid enclosure, an earthen rampart, which must be the remains of a small fortification or military camp. It measured about 85 m. square and had gates in three of the sides, see plan Fig. 43. Near to the west of it there is a 4 m. high mound, at the top of which one could see metre thick layers of straw, charcoal, bones, fabrics and similar refuse laying in great disorder. Without digging — and I had no opportunity for this whatsoever — it was impossible to ascertain if the mound contained any structural remains, or if it was just a huge rubbish-heap.

This small ruin has escaped the attention of earlier travellers. It might be identified with the fortress Kümüsh-aqma, which in a note of Hsi-yü-wen-chien-lu 1777 is said to be situated 520 li north-east of Qara-shahr.

7. MONOLITHS AT CH'AI-O-P'U.

About 3 km. tho the east of the village Ch'ai-o-p'u in T'ien-shan and about 1 km. to the north of the eastern end of the lake nearest to this village I discovered a fallen "baba" stone with a very rude face and an engraved line forming a girdle, Pl. IX a. Total length of the stone 2.2 m. The girdle is 1.2 m. from the top. In the neighbourhood there is an earthen mound from a karez or subsoil irrigation canal.

About 100 m. south of the main road Turfan—Urumchi there is an erect stone, 2 m. high, and with an engraved belt or girdle 1.05 m. from the top, just as was the case with the nearby baba stone. It was impossible to discern traces of any face though there has probably once been one.

To the north of the road and in the vicinity of the telegraph line I found another standing, thin stone, 1.65 m. high, but I could discover no engravings on it. Between the latter and the road there is still another small erect stone. There are also probably some stone graves here.

Afterwards I have learnt that this site is mentioned by HUNTINGTON (p. 300): "Two monoliths about seven feet high, stand near the shore. Near them there are a number of artificial mounds of various sizes, and several lines composed of

groups of stones. Each group consisted originally of about eight boulders from one to three feet in diameter arranged in a circle perhaps six feet across."

Owen Lattimore also visited this place, and he saw three monoliths, one of them being the baba stone of my Pl. IX a. Besides he mentions "five large tumuli arranged in a line, surrounded by curious broken circles of small boulders on the bare ground. The disposition of the whole site is a little confused by the mounds about the shafts giving access to an abandoned karez." (Lattimore 1930, p. 148 f.)

In the Ili valley Lattimore saw not a few monoliths.

As far as I am aware Stein is the first to have recorded a baba stone in Sinkiang. It is standing in a primitive Kirghiz shrine at Chalkoide in the mountains between Kelpin and Uch-turfan (Stein 1921, Fig. 341). There the stone effigy was worshipped by the Kirghiz.

As a rule the baba stones are placed on a tomb or in the immediate vicinity of a tomb. It is hardly likely that the baba found by Stein and the shrine surrounding it are contemporaneous. Whether the baba was taken to the shrine from its original place or the shrine was erected around the baba is hard to decide. In any case the combination of shrine and effigy is highly suggestive as a manifestation of the survival of ancient pre-Mussulman worship.

Von Le Coq tells us about similar worship by the Kirghiz (Le Coq 1928, p. 154). They regard the baba figures either as gods or as memorials of famous ancestors.

In Qasaqstan the baba figures are common. Le Coq mentions one along the road from Semipalatinsk to Sergiopol and another between Sergiopol and Kulja (Le Coq 1926, p. 160).

In Sergiopol I noticed two babas which had been moved thither from the surrounding neighbourhood, and one is standing at the roadside on the outskirts of Urdjar. Several baba stones have been taken to the museum in Semipalatinsk. In the Minusinsk region and in N. Mongolia they are extremely common, and many specimens are also known from the eastern part of Inner Mongolia, Chakhar and Ulan-chap, the former discovered by Prof. J. G. Andersson, the latter found by me.

The baba stones are distributed over practically the whole Eurasiatic steppe region, and seem to belong mainly to the first millenium A. D.

The stones at Ch'ai-o-p'u have nothing to do with the few finds of worked flint recovered in the vicinity and discussed on p. 26.

I will revert to the question of the baba figures and hope to be able to treat it more fully in a forthcoming publication on Inner Mongolian antiquities.

*

Though they have no connection with the monuments above, it ought to be mentioned that there are several ruins of ancient watch-towers or signal-towers around Ch'ai-o-p'u along the Turfan-Urumchi road.

PART IV.

THE SOUTHERN BORDER REGION OF LOP-NOR

This last part of my treatise is to deal with the finds obtained from three ruined sites at Charchan, Vash-shahri and Miran which I visited in 1928. They have been well known for many years. Though my collections from there are in no way unique they are nevertheless of interest as originating from stations on the Road of the South, the Silk Road which skirts the southern rim of the Tarim Basin.

1. CHARCHAN.

In "Serindia" STEIN gives a well presented collection of data about Charchan as furnished by Chinese historical records, of which I give a short extract here.

In Han-time the name of the oasis was Chü-mo, and it was still occupied towards the end of the third century A. D. It was the capital of a small kingdom. The Kharoshthi form Calmadana is most likely meant to reproduce the indigenous name of Charchan. According to the Buddhist pilgrim SUN YÜN it was called Tso-mo in A. D. 519, and was then held by the T'u-yü-hun, a nomad tribe occupying the high plateaus to the west of the Kuku-nor lake. In 640 Charchan was a part of the vast dominion of the Western Turks. When the famous HSÜAN TSANG returned from India about 645 he found no inhabitants inside the lofty city walls of Charchan, or Che-mo-t'o-na as he calls it; this name is apparently a reproduction of Calmadana. The place was garrisoned again some fifteen years after the passage of HSÜAN TSANG. In the period 674—76 its name was changed to Po-hsien. It is known to have been occupied in the beginning of the 8th century. At this time the place seems to have been called Padaki (Clauson, p. 302). The present name first appears as Cher-chen in a Tibetan record found in Miran. STEIN suggests that this new name is attributable to the change wrought by the T'u-yü-huns' occupation. It was partly destroyed by the Mongols, but when in 1273—74 MARCO POLO passed here, he says that Charchan was a province of Great Turkey, and that the people worshipped Mahomet.

STEIN is of the opinion that cultivation had disappeared by the end of the 18th century, probably for a long period earlier. Only after the first third of the last

century did the Chinese begin to settle Charchan once more, as a penal station. Its growing importance as an agricultural settlement has been stated by STEIN, and on my visit in 1928 I found that the oasis had improved still further.

On his fourth expedition, 1883—85, PRJEVALSKY visited Charchan. As the information he obtained regarding the Kohna-shahr is very important and has been overlooked by STEIN I herewith render it in English from HEDIN's Swedish translation of PRJEVALSKY's narrative (pp. 396 f).

"At Charchan there are, in the middle of the desert and partly covered by mounds of loess and sand, traces of an old culture — ruins of towers, houses and old canals. According to local tradition two cities existed here at different epochs. Among the remains of these the natives now and again undertake diggings, especially after the storms when the sand is removed to a considerable depth. Here they find coins of copper and gold, silver bars, gold ornaments, jewellery, iron objects and copper vessels, and, oddly enough, sherds of glass — all in the older city. From the younger city they obtain burnt bricks. They also excavate tombs containing wooden coffins. In these the corpses are very well preserved, thanks to the extreme dryness of the ground and the air. The men are of very high stature and have long hair; the women have one or two queues. Once a tomb was discovered with twelve male corpses in a sitting position. Another time a young girl was discovered in her coffin. Her eyes were covered with leaves of gold, and her head was wound round with a gold ribbon from chin to crown. She had been dressed in a long garment, now totally decayed, but on the breast were some thin stars of gold; her feet were bare. The natives of Charchan told us that even the wooden coffins in some instances were so well preserved that the wood could be used for making various small articles. Together with human corpses one also found bones of horses and sheep in the tombs."

PRJEVALSKY apparently made no excavations or collections of antiquities, he only gathered information. In the statements of the natives the riches found in the tombs have probably been exaggerated — this is usually the case when ignorant people describe archaeological finds. Another typical detail is the mention of the very high stature of the corpses: the size of a corpse or skeleton is always magnified when described. Several points are very suggestive and ring true: the good preservation of the corpses, the occurrence of glass and so on. It is also interesting to note that the existing ruins have been extensively used by the natives as "brick mines".

GRENARD's description is also interesting and worth quoting (Grenard Vol. 3, p. 146). He visited Charchan 1893.

"A Tchertchen à l'ouest de l'oasis et légèrement au sud de la route de Kéria, des maisons en ruines sont ensevelies sous le sable; les toits ont disparu, mais les murs sont encore assez bien conservés. Ils sont faits de briques cuites, grosses et solides. Les anciens du village disent qu'on y a trouvé aux premiers temps de la colonisation du nouveau Tchertchen, c'est-à-dire début de ce siècle, des corps d'hommes vêtus de

laine, ayant les cheveux courts et la barbe longue, portant des anneaux aux oreilles et quelquefois au nez, divers ustentiles de cuisine, des fragments de *iambou* d'argent, des pièces de monnaie chinoises et des fragments de livres musulmans."

GRENARD acquired a coin of Wu Ti of Liang (first half of the sixth century).

As seen from the above, STEIN surveyed the historical records dealing with Charchan, and he also searched the actual site. Among his acquisitions only one coin of the period 1054—56 admits of prima facie dating. He did not come across any graves.

As soon as the local people in Charchan, in July 1928, became aware of my antiquarian interests they offered small objects which they had picked up on the surface of what they called the Kohna-shahr. Among the things purchased in this way there may be a few of somewhat dubious age and uncertain origin, but most of the articles are certainly genuine. When I moved out of the bazaar and pitched camp in the western border of the oasis I personally picked up some objects of the same kind as those purchased from the local people.

The present Charchan oasis is situated on the left bank of the Charhan-darya. On the right bank there is a smaller, and probably rather new, oasis called Aralchi, which does not, however, call for further mention here. The cultivated ground, the fields, the orchards etc. form an elongated oval nearly 3 km. wide along the river, just as do most of the oases situated on river-banks. Above the cultivated ground a branch of the river is forced to run in a westerly direction, afterwards turning to the north, and finally west-northwest. Along its northern course it forms the western boundary of the oasis. To the west of it opens a sterile, slightly undulating and eroded gobi surface, a soft, dusty clayey ground with a thin layer of fine black gravel. A rather large part of this desert is called Kohna-shahr (Old Town) as it yields pottery fragments and other small finds.

Very few structural remains are to be seen, inter alia a small tower of uncertain age. It is possible, though, that some of the undulations which now show the same surface as the rest of the ground are hiding very dilapidated brick ruins. The destruction of the ruins has thus been going on constantly since the time of PRJEVALSKY's visit.

The most striking feature is a dry irrigation canal running roughly from south-east to north-west and near the western border of the Kohna-shahr. It has raised embankments and the bottom lies higher than the surrounding ground. Some tamarisks are growing along it. One time it no doubt watered a good deal, if not the whole, of the fields and orchards of the old city of Charchan.

The present oasis covers probably a part of the old town, but as practically all the ground inside it is cultivated there was little hope of discovering any antiquities there during a short visit. I therefore limited my survey to the deserted part west of the modern oasis.

A. GRAVES.

In the eastern part of Kohna-shahr very near the border of the present oasis we found five graves within a distance of 17 m. (cf. the plan Fig. 44). Owing to wind erosion the skeletons were lying very near the surface of the ground and were more or less incomplete.

Grave 1 with its poorly preserved skeleton contained a large earthenware jug Pl. 35:4 and two pairs of rectangular bronze fittings, Fig. 45, probably from a wooden box or the like. These objects were found above the head of the buried man, Fig. 46. The jug is of dark, nearly black colour and has a simple ornamental band running round the shoulder; its age is hard to determine.

Graves 2 and 3 were much disturbed as seen from the plans in Fig. 46. They contained nothing besides the bone fragments.

Grave 4, also disturbed, had an earthenware vessel near the head of the skeleton, Pl. 35:1. The shape of the vessel is about the same as that from Grave 1, only rather slenderer, and the ware is coarser and of inferior quality.

Grave 5 had the best preserved skeleton but the skull was missing. The feet were lying 39 cm. below the upper part of the cerebral column. No sepulchral deposit was preserved.

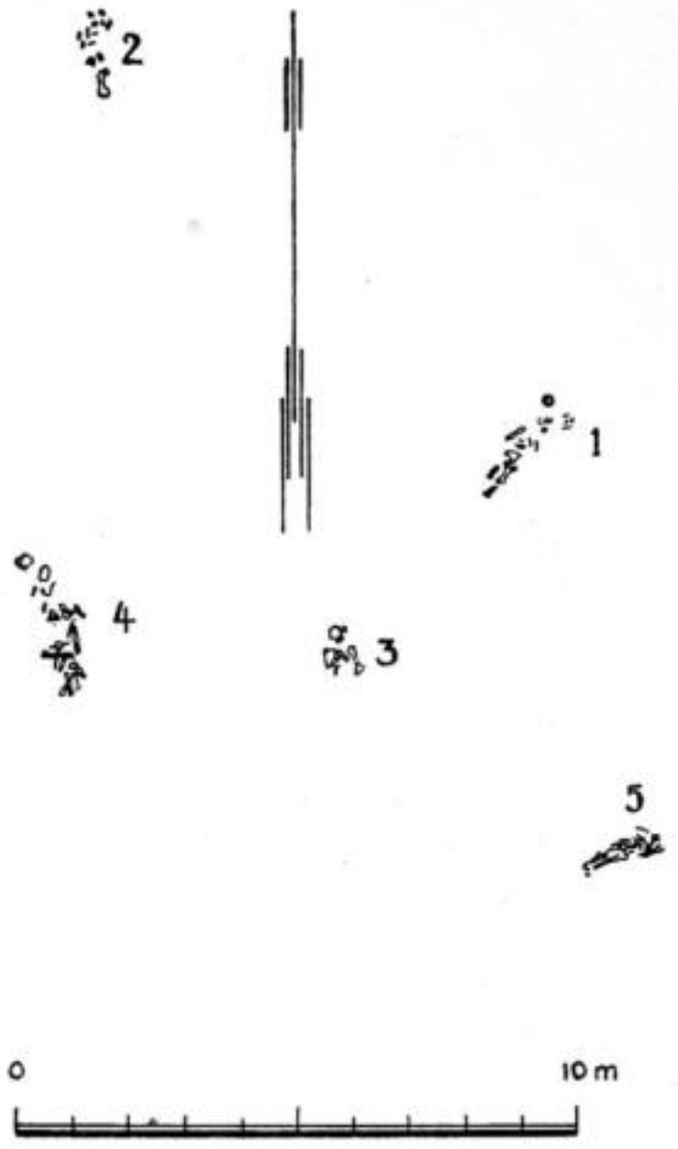


Fig. 44. Charchan, Kohna-shahr. Plan of graves 1—5.

Another group of graves was discovered N and NW of the 'tati' surfaces which mark the extension of the Kohna-shahr. Two of them, Graves 6 and 7, were excavated by some temporarily engaged people without my knowledge, and the data from the examination are thus very poor.

Grave 6 contained bones of at least two individuals. The best preserved skull was taken for examination, for which I must refer to Prof. BACKMAN's report. The dead were buried in a pit, roughly 2.5×1.5 m., and 1.5 m. deep, and the pit had been roofed with a layer of round logs covered with straw matting.

Some fragments of a green woollen braid Pl. 32:10 were found on one of the skeletons and the bottom of a low clay bowl. Fig. 47, of the same type as other Charchan bowls. There was also a part of a wooden vessel made of a hollowed-out trunk, Pl. 32:2, and having a very simply engraved figure of a deer(?) on the outside, Fig. 48. The bottom must have been of leather and secured with strings in the holes along the lower rim. The main part of a wooden comb was also recovered and

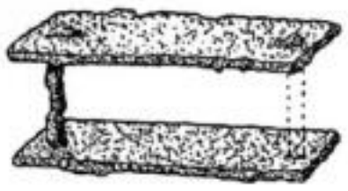


Fig. 45. Probable arrangement of bronze fittings from Grave 1, Charchan. Half size.

finally a wooden spindle whorl, or maybe more correctly the whorl of a fire-drill, Pl. 32: 3. The comb, which has been partly reconstructed in Fig. 49, has had the shorter teeth secured in a lost transverse piece (of tendon?) and the long outer teeth have been tied to the sides with strings running in the marked notches on the upper part. If this reconstruction is correct it shows a certain likeness with the Lop-nor comb Pl. 9: 1.

Grave 7 was situated by the side of Grave 6. The construction was in conformity with the other one but the roof was made of reed bundles wound round with two cords. The pit contained one skeleton and a clay pot of the same kind as several purchased in Charchan and stated to originate from Kohna-shahr. The people were not quite certain if the cup Pl. 35: 6 or 35: 7 was found in this grave.

Both of these graves seem to have been more or less plundered on some former occasion. In the earth around the dug out graves I found a small carved peg with a row of holes (K. 13345: 6) having quite withered wood.

The other graves were destroyed by treasure-seekers long ago, and so was another group of five or six graves a little farther to the west.

On the surrounding ground we did not notice any fragments of pottery, otherwise so common in Kohna-shahr proper. This burial place was apparently situated outside the old town.

As the funeral deposits are very poor the dating of these graves is somewhat hazardous. It is quite clear that they are of a pre-Mussulman age, and that they belong to people that inhabited Charchan before Marco Polo passed here. It is not quite out of the question that Graves 6 and 7 belong to the Lou-lan period, as the construction of these graves reminds us of some of the Lop-nor graves, but the sepulchral furniture is too insignificant to allow of any proper distinction.

B. 'TATI' FINDS.

Pottery.

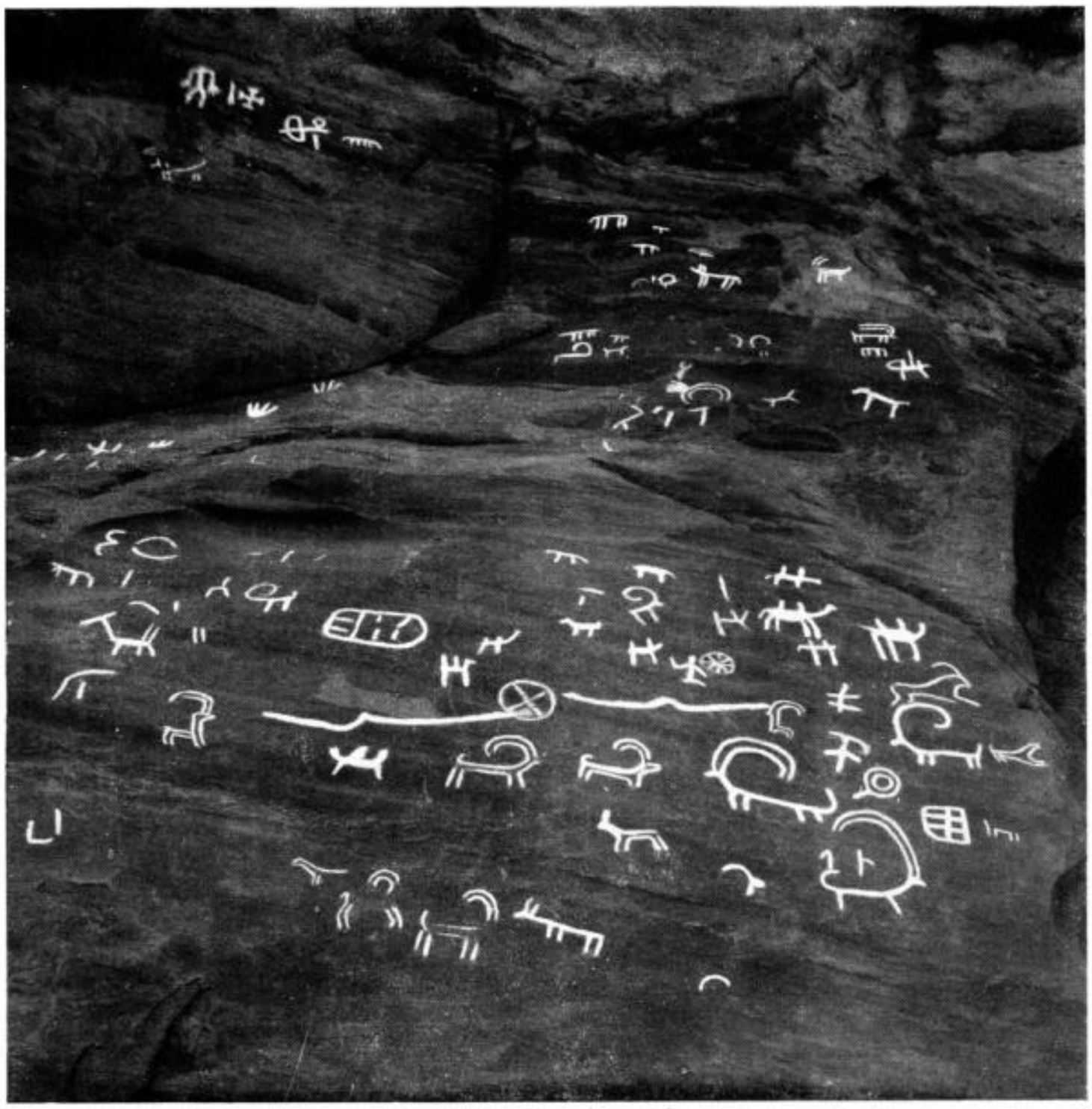
From the historical data regarding Charchan, as seen from the brief extract given above, we do not reach further back than the time of the Han dynasty, when the oasis was known as Chü-mo. There is nothing to contradict the supposition that Charchan was inhabited long before that, possibly already in prehistoric times. The finds furnishing the proofs, however, have been wanting. With the acquisition of the beautiful earthenware vase shown in Pl. 1 we have apparently acquired an object antedating the Han dynasty, cf. p. 18 f. Its general features places it among the chalcolithic pottery, possibly of the second millenium B. C. A few plain potsherds may also be prehistoric. (K. 13342: 28, 30—31, 52—53).



a. The first group of the Quruq-tagh rock carving.



b. The last group furthest to the south.



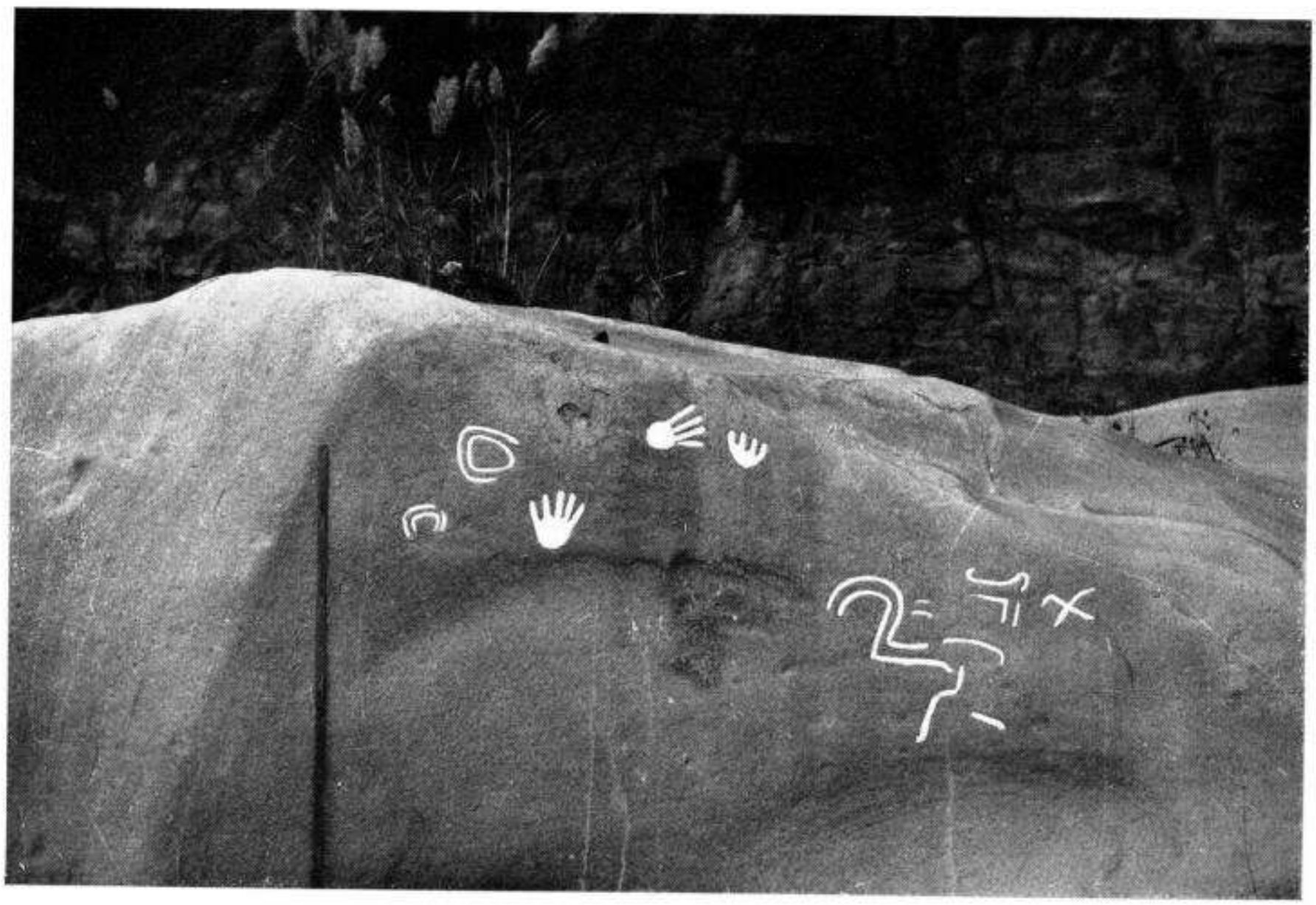
c. A part of the third group of the Quruq-tagh rock carving.



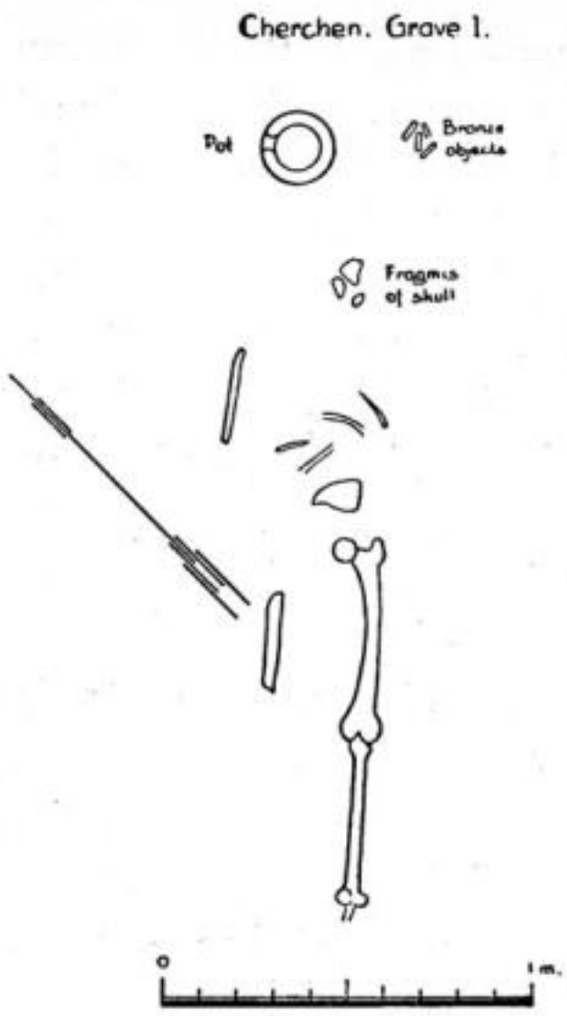
a. The figures to the right of the third group

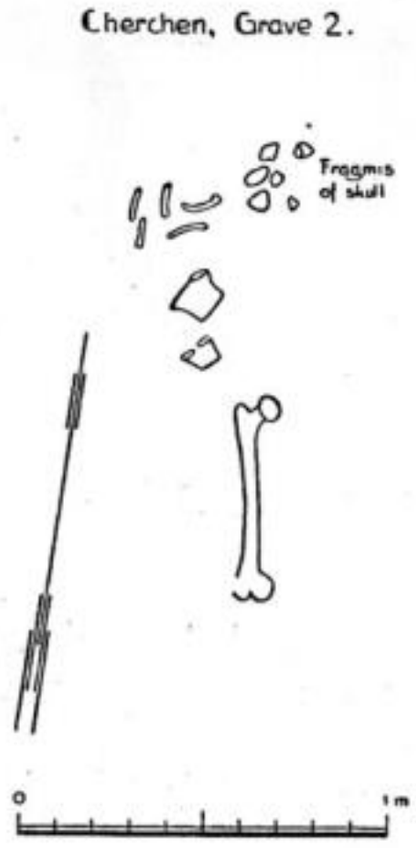


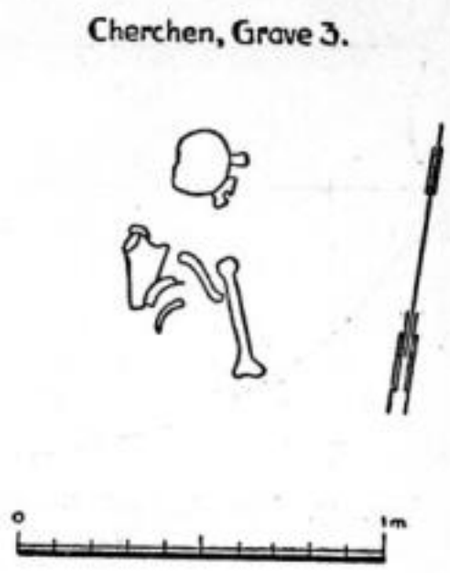
b. Three lines of Mongol script.



c. A carving on a boulder.









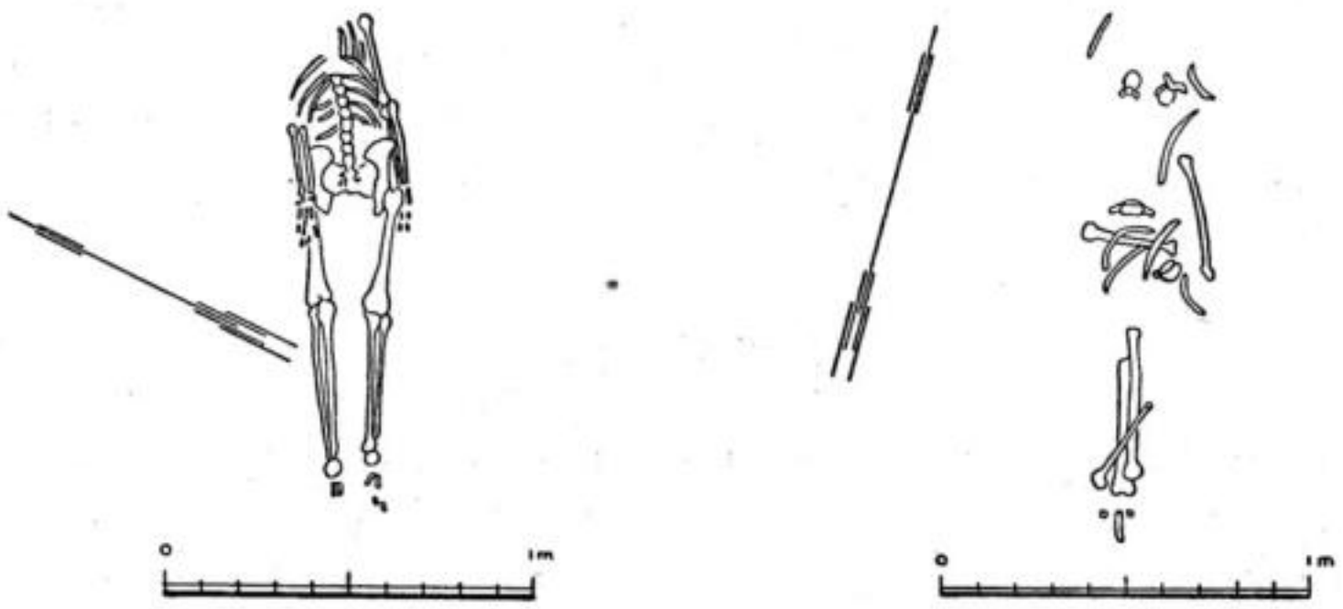


Fig. 46. Charchan Kohna-shahr. Plans of graves 1—5.

A few pottery fragments resemble in the ware the Lop-nor pottery from the time of Lou-lan (K. 13342: 20, 24—25). The light-grey vase Pl. 35: 3 is a well-known Han type, and closely recalls a vase found in Mass-grave 1 at Lop-nor (Pl. 21: 2). Together with some of the beads, and possibly a coin, these are the remains that can be attributed to the time of Chü-mo.

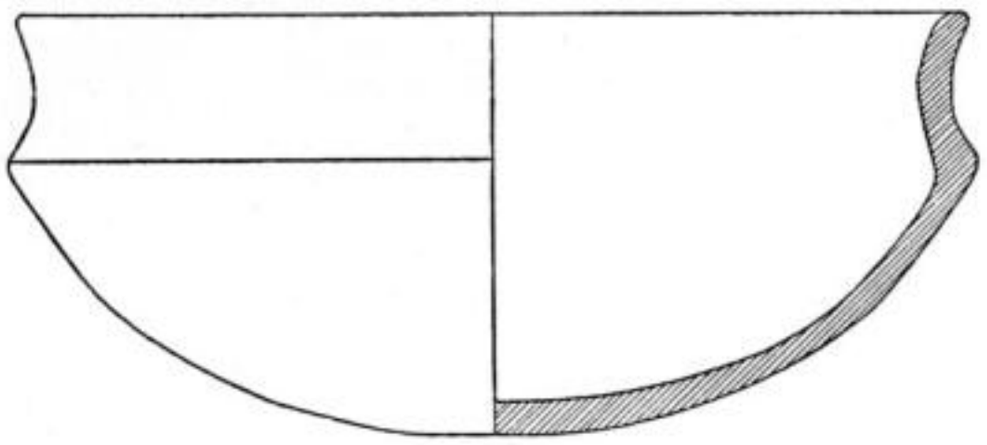


Fig. 47. Drawing of the earthenware bowl K.13345: 1 from Charchan. Half size.

The main bulk of the Charchan pottery, a coarse, thick-walled and brick-red earthenware, must be post-Han, and probably originates from the time of the later occupations, i. e. from the T'ang, Sung, and Yüan dynasties. A minor part of the sherds shows a dark grey, well-burnt ware, Pl. 36: 7. Pl. 36: 5 is brownish. These are not so thick-walled though they have belonged to large vessels.

As is the case at Vash-shahri, a few potsherds show incised characters, probably Tibetan, Pl. 37: 3 (and possibly also Pl. 37: 1), which gives a hint as to their date. The Tibetan occupation of Eastern Turkistan lasted from 670 to 692, and from the middle of the eighth century for one hundred years. I am indebted to Professor HELMER SMITH, Upsala, for a confirmation of the nature of the incised characters.

Most of the handles are loop-shaped, but there are also lugs. A single case of a horizontally applied handle is shown on Pl. 37: 4.

Spindle whorls were made of potsherds, but Pl. 37: 9 shows a fragmentary whorl which was originally made for this purpose. It is also of earthenware and has some impressed dots.

The bowls Pl. 35: 5—7 have the same shape as Fig. 47. Two of these I know myself as coming from graves inside the Kohna-shahr, and I am pretty sure that all the complete vessels have a similar origin. We must also reckon with the possibility that most of the small finds such as beads and other ornaments or metal fittings have come from destroyed graves. Many potsherds, on the other hand, must be regarded as refuse from dwellings.

Small objects.

Among the five copper coins obtained, one is a "Goose-eye", i. e. one of those much debased coins so common during the final period of the Lou-lan time. A K'ai-yüan coin is a T'ang issue, and two Sung coins bear the periods corresponding to 1017—22 and 1023—32. The fifth coin, Pl. 33: 9, has exactly the same shape as the ordinary Chinese ones of the T'ang and later dynasties; the four characters, however, are non-Chinese and illegible. It is apparently an imitation of a Chinese coin.

There are three bronze buckles all without tongues. Pl. 33: 3 somewhat recalls a buckle of T'ang? type from the Togujai site (Stein 1907, Pl. LI, M. 001. g), and Pl. 33: 2 has a parallel from the Lou-lan station (Stein 1921, Pl. XXXVI, L. A.



Fig. 48. Figure incised on the wooden bucket Pl. 32: 2, Charchan. Nat. size.

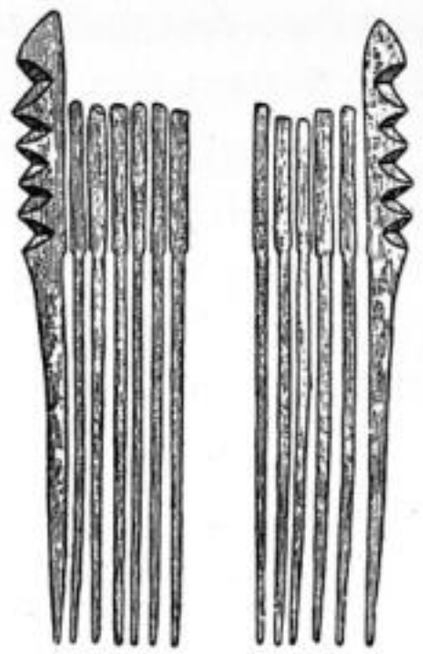


Fig. 49. Reconstruction of the remains of a wooden comb. Charchan, Grave 6. Half size.

0050) and another from Inner Mongolia in the Museum of Far Eastern Antiquities in Stockholm (K. 10204: 6); these latter are more elongated.

Pl. 33: 1 is of a type quite common in Inner Mongolia. I myself picked up a specimen in a ruined house of the Sung or Yüan dynasty near Khara-khoto at the lower Edsen-gol river, and in MFEA there are five similar buckles obtained in Kueihua or in Inner Mongolia. (K. 11003: 1372 and 1383, K. 11233: 13, K. 11283: 38 and 40). Hardly any of these last mentioned had any tongue, but the one from Charchan may have had one. There is always the possibility, however, that this type was never used as a true buckle for fastening two ends of a strap, but that it was hanging on the lower edge of the belt (or other strap) and used for attaching other objects in the same manner as on the girdle in the Korean Gold Crown Tomb (Hamada & Umehara, Fig. 33). A modern development of this type is to be found among the silver fittings that the Mongols carry on their girdles, and where they suspend their cinderbox, knife and chopsticks etc. It is no doubt a non-Chinese contrivance developed among the Central Asian nomads.

The bronze fitting Pl. 33: 4, to join the strap-end with the rear side of the buckle, has a parallel from Khotan (Stein 1928, Pl. X, Badr. 0168). Pl. 33: 5 has probably been used in the same way.

Small pendants, rings and beads of bronze were also purchased in Charchan, Pl. 33 and 34. The bronze seal or signet Pl. 33: 12, is identical with some specimens purchased by HEDIN in Khotan on one of his earlier journeys and now published by MONTELL (Montell 1938, Pl. V: 1—3), who suggests that this type of intaglios was the arms or sign of a religious sect or a group of monasteries. Referring to a Khotan signet found by GRENARD he considers them as reminiscences from the Nestorian time. I should like to draw attention to the similarities between this type

of intaglios and the relief design on a slab in Gandhara style from Panjab (Stein 1937, Pl. II, B. A. 047).

One of the other two signets, Pl. 33: 22, has four engraved scrolls, also recalling Khotan signets (Stein 1921, Pl. V, Khot, 06. s.)

The three silver objects Pl. 34: 12—14, one pendant and two fragments of finger rings, are nicely polished by wear. The shape of the pendant reminds one of an Oriental object found in the Swedish Viking Age city of Birka (Arne 1914, Fig. 105).

A bronze mirror with handle, Pl. 33: 23, is of clear Chinese origin. The decorated side depicts in low, flat relief a scene which is rather popular on charms and amulet coins during the Sung and later dynasties. Under a fir tree is seated a man with a halo. He is clad in a garment with rich folds. Before him stands a smaller figure carrying something on his hands. Between them, in the foreground, there are a crane and a tortoise. The two animals as well as the fir tree are emblematic of longevity, but it is uncertain whom the human figures are meant to represent. They have been interpreted as representing the Taoist immortal MA KU offering a cup of wine to the Star of Happiness,[1] an interpretation that does not seem conclusive, as the smaller figure has none of MA KU's common attributes. In Chinese numismatic works[2] the scene is said to show *Hsing kuan* or Mandarin of the Stars being attended by a servant. CHAVANNES[3] interprets the sitting figure in the same scene as the divinity presiding over human life and the other figure as a young boy offering him some sort of object. One of these explanations appears to be more justified than the first one given above. The closest parallel as to the outline of the mirror is afforded by a specimen from Turfan (Stein 1928, Pl. LXXI, Kao. III. oi). The Charchan mirror can hardly be older than the Sung dynasty for stylistical reasons; it may be still younger.

Shells with suspension holes as well as beads and other small articles made of shells have been examined microscopically by Dr. BERGENHAYN and found to belong partly to a freshwater bivalve *Quadrula* living in East Asia and North America, partly to various marine shells such as *Cyprea moneta, Strombus floridus* and *Columbaria mendicaria.* The latter have thus been brought overland to Charchan from the far off sea. Some of them are shown in Pl. 34: 55—59. Pl. 34: 39 is a small pendant in the shape of an animal(?), and Pl. 34: 36 has two small engraved circles with central dot just as has the bronze object Pl. 33: 8. It is indeed remarkable to find how the people in the Tarim Basin used marine shells, apparently to be carried as charms and ornaments, as they lived farther from the sea than any other people in the world. Cowries, and probably also other shells, were sometimes used as

[1] Lockhardt: The Currency of the Farther East, No. 1652.

[2] E. g. Ku-chüan-huei, by Li Ch'u-peng.

[3] Le cycle Turc des douze animaux (TP 7) Fig. X.

current money. They seem, however, to have been most commonly used as highly appreciated charms and amulets. I have touched on these questions in BMFEA 7, pp. 113 f.

Beads and pendants are quite common and certainly from several different periods. The materials include opal, agate, jade in several colours, malachite, lapis lazuli, amethyst, coral and glass. Most of them have been pictured on Pl. 33 and 34. Those of stone, especially jade, are certainly of local manufacture, i. e. made somewhere along the southern border of the Tarim Basin, those of lapis lazuli may have been traded from Badakhshan, where famous mines are known to have existed (T P 1904, p. 66). The pendants in some instances consist only of an oblong or drop-shaped pebble with a perforation at one end, Pl. 34: 49, 51, 54 and 60. Some of the suspension holes are drilled from both sides and meeting at an angle, i. e. the holes are V-shaped. The glass beads are no doubt importations from the West, the main bulk of them would pass as Roman beads in any country. Of special interest are the eye-bead Pl. 33: 16 and the mosaic bead fragment Pl. 33: 18. Several others such as Pl. 33: 28—33 are made of two kinds of differently coloured glass and Pl. 33: 19 has the surface covered with white, red and blue spots, standing out brightly against the black background.

K. 13342: 69 is a fragment from the lower part of a glass bowl, the uncoloured glass looking very similar to some fragments from Lou-lan in HEDIN's old collection, and the same is true regarding K. 13342: 70—71, two fragments from the widening rim of some small glass bottles (cf. Bergman 1935 c, pp. 114 ff.). These sherds may very well be of Syrian glass. A few sherds of greenish, semi-translucent glass from here have probably been made locally in Turkistan at a later period.

In general these 'Tati' finds from the Kohna-shahr of Charchan are of the same sort as those acquired by HEDIN in Khotan and adjacent sites, but among the articles from Charchan there are none of a Buddhistic character, whereas the Khotan collection has many such objects.

There is very little Chinese material among the finds from here, but the presence of some coins indicate that there was some trade with China in the Sung period after the interruption caused by the Tibetan conquest in T'ang time. Even in Han time trade must have flourished, as Charchan is situated on the very Road of the South, a highway that has remained in use ever since. It was along the same road that influences from India and the West reached Charchan.

The extent of these 'Tatis', several kilometres in length and breadth, where pottery fragments and small articles occur abundantly, is sufficient to prove that the ancient Chü-mo and its successors must be located in the position of the present Charchan oasis and its immediate vicinity, as rightly pointed out by STEIN. As far as can be judged none of the objects acquired by me is of a date later than the Yüan dynasty, and it therefore seems reasonable to suppose that the occupation of the present Kohna-shahr site ended some time during the 14th century.

LIST OF ANTIQUITIES FROM CHARCHAN

K. 13335. Pottery jar of light grey, hard ware. Low narrow neck, bulky shoulder and flat bottom. The surface of the shoulder is slightly wavy from a furrow running spirally round the vessel. H. 17.5 cm. Diam. of rim 8.3 cm. Diam. at widest place 15.5 cm. Diam. of bottom 8.5 cm. Pl. 35:3.

K. 13336. Clay pot of reddish-brown, partly black ware containing rather coarse grains of sand. Around the short neck a leather strap is fixed (probably modern) to stop up a leak. H. 12.5 cm. Diam. of mouth 8.3 cm. Diam. of widest part 12.2 cm. Diam. of bottom 8.5 cm. Pl. 35:2.

K. 13337. Pottery bowl of dark grey, nearly black ware. Rounded bottom, the wall slightly widening towards the rim. H. 10.5 cm. Diam. of rim 15.7 cm. Diam. at lower edge of wall 13.2 cm. Pl. 35:5.

K. 13338. Pottery bowl of the same type as the preceding one but with low wall. Moreover, the ware is a little lighter. H. 9.5 cm. Diam. of rim 14.5 cm. Diam. at lower edge of wall 13.6—14 cm. Pl. 35:7.

K. 13339. Pottery bowl of the same type as the preceding one. The rim is partly broken. Within the ware is red and contains rather coarse grains of sand. H. about 11 cm. Diam. of rim 18.4 cm. Diam. at lower edge of wall 18.1 cm. Probably originating from Grave 7. Pl. 35:6.

K. 13340. Chinese bronze mirror with handle (broken). One side has a decoration in very flat relief: to the left a person is sitting under a tree. He is wearing a dress with many folds, and a halo. Behind the tree a cloud scroll. To the right a standing figure carrying something on his hands. Between the two figures are a crane or heron and a tortoise. The scene is encircled by two raised lines, and the rim of the mirror has a moulding that also runs along the handle. L. 18.1 cm. Diam. 9.9 cm. Reddish-brown patina with insignificant green spots. Pl. 33:23.

K. 13341:1. Chinese coin, K'ai-yüan-t'ung-pao (618—627). Diam. 25 mm.

K. 13341:2. Chinese coin, T'ien-sheng-yüan-pao

K. 13341:3. Chinese coin, T'ien-hsi-t'ung-pao (1017—1022). Diam. 26 mm. The reverse is carelessly stamped.

K. 13341:4. Copper coin of the same shape as the Chinese ones but with four non-Chinese characters. Diam. 24 mm. Pl. 33:9.

K. 13341:5. "Goose-eye" coin with irregular contour. Diam. 10—12 mm.

K. 13341:6. Portion of square bronze buckle. A rivet in each corner. 36×30 mm. Pl. 33:3.

K. 13341:7. Portion of bronze buckle, pear-shaped contour. 24×21 mm. Pl. 33:2.

K. 13341:8. Portion of brass buckle. The front part is oval and has a small point, the rear side is rectangular to receive the strap. 19×18 mm. Pl. 33:1.

K. 13341:9. Bronze strap-end, from buckle. Rectangular plate with the short end wavy. From the other end projects a double hoop (broken) which has passed round the tongue-bar of the buckle. The edge is bevelled along long sides. One hole for a rivet. 30×20 mm. Pl. 33:4.

K. 13341:10. Small bronze pendant, square with two loops. The flat part has five engraved circles on each side. 17×14 mm. Pl. 33:8.

K. 13341:11. Bronze strap-end? from buckle? Two loops at one end, the other end rounded. Below there has been a rivet. Ornamentation consisting of coarse lines. 15×10 mm. Pl. 33:5.

K. 13341:12. Small bronze pendant, triangular with a notch across the lower point. 15×10×4 mm. Pl. 33:11.

K. 13341:13. Bronze mounting in the shape of a six-petalled rosette with large central hole. Diam. 16 mm. Th. 5 mm. Pl. 33:7.

K. 13341:14. Bronze ring, cornet-shaped. Diam. 20 mm. Th. 11 mm. Pl. 33:6.

K. 13341:15. Sewing ring of bronze with three rows of small hollows. Diam. 21 mm. W. 7 mm. Pl. 33:10.

K. 13341:16. Three fragm. of a small brass finger ring which has contained a round stone.

K. 13341:17. Small spiral of bronze wire. L. 8 mm. Diam. 5 mm. Pl. 33:13.

K. 13341:18. Fragm. of flat bronze tube, traces of lines across. L. 24 mm. Diam. 7—8 mm. Pl. 33:14.

K. 13341:19. Small bronze bead enclosed in a grooved bronze band. Diam. about 9 mm.

K. 13341:20. Small bronze boss, hemispherical with central hole. Diam. 7 mm.

K. 13341:21. Square bronze seal. Divided into quarters, three of which contain a figure recalling a four-petalled flower, the fourth contains a swastika. The loop on the other side is lost. 25×23 mm. Pl. 33:12.

K. 13441:22. Front part of a silver finger ring with cavity for a stone. On each side a small knob projecting from the edge. Pl. 34:12.

K. 13341:23. Hexagonal silver bezel with partly obliterated pattern. 14×14 mm. Pl. 34:13.

K. 13341:24. Silver pendant in the shape of a shovel. The loop slightly patterned. Probably the frame of some ornament. 28×16 mm. Pl. 34:14.

K. 13341:25. Pendant of sheet-brass, probably quite modern work. L. 30 mm.

K. 13341:26. Fragm. of tube-shaped object of dark-green jade (?) The complete end is ground off on two sides and pierced with a suspension hole. L. 27 mm. Diam. 14 mm. Pl. 34:40.

K. 13341:27. Small square seal of light green serpentine. A high loop on the upper side. Engraved with four small volutes. 19×18 mm. Pl. 33:22.

K. 13341:28. Rectangular seal of weathered white marble. A loop on the upper side. The engravings are obliterated. 24×19 mm. Pl. 34:37.

K. 13341:29. Small square slab of black stone with bevelled edges on one side. Possibly an unfinished seal. 14×14×4 mm.

K. 13341:30. Small U-shaped object of black pottery. 19×18 mm.

K. 13341:31. Rectangular bead of white marble with a moulding. 14×7×5 mm. Pl. 34:38.

K. 13341:32. Small birdlike figure made of a thick shell, probably from a *Quadrula*. The thickest part is pierced with a longitudinal hole. L. 17 mm. Pl. 34:39.

K. 13341:33. Small pendant (?) made of shell (probably a *Quadrula)*. Consisting of a rectangular part, pierced with two small holes, and showing two engraved circles on one side, and one pointed part. L. 20 mm. Pl. 34:36.

K. 13341:34. About half of a *Quadrula* shell with a suspension hole through the hinge. Diam. about 65 mm.

K. 13341:35. A worn shell of *Strombus floridus*. L. 15 mm. Pl. 34:58.

K. 13341:36. Pierced shell of *Columbaria mendicaria*. L. 12 mm. Pl. 34:59.

K. 13341:37-41. Five cowries *(Cyprea moneta)* with suspension hole. L. 15—19 mm. —:37 Pl. 34:55, —:41 Pl. 34:56.

K. 13341:42. Cowrie shell *(Cyprea moneta)* with dorsal part ground off. L. 17 mm. Pl. 34:57.

K. 13341:43. Half of a cowrie shell *(Cyprea moneta)* with dorsal part ground off. L. 27 mm.

K. 13341:44-48. Five beads made of a *Quadrula* shell. Diam. 10—4 mm. Pl. 34:31—35.

K. 13341:49. Hexagonal bead of white and pink opal, tapering towards the ends. L. 18 mm. Th. 11 mm. Pl. 34:43.

K. 13341:50. Cylindrical bead of light-green stone, recalling jade. L. 17 mm. Diam. 9 mm. Pl. 34:41.

K. 13341:51. Barrel-shaped bead of white, striated agate. L. 17 mm. Diam. 13 mm. Pl. 34:46.

K. 13341:52. Octagonal bead of white, striated agate. L. 14 mm. Diam. 9 mm. Pl. 34:45.

K. 13341:53. Drop-shaped pendant of white agate. Suspension hole through the thinner end. 21×12×7 mm. Pl. 34:50.

K. 13341:54. Pendant made of a small pointed stone, white jade? L. 19 mm. Pl. 34:51.

K. 13341:55. Drop-shaped pendant made of a pointed piece of white jade. L. 15 mm. Pl. 34:49.

K. 13341:56. More or less drop-shaped pendant of white jade. L. 17 mm. Pl. 34:48.

K. 13341:57. More or less drop-shaped pendant of light-green jade. The suspension hole is V-shaped. 26×17 mm. Pl. 34:47.

K. 13341:58. Oblong pendant of a light-green stone resembling jade. The middle part is thicker than the ends. Suspension hole at the thinner end. The lower end has two notches. 30×11×9 mm. Pl. 34:44.

K. 13341 : 59. Small pyramidal pendant of pot-stone. 16×7×6 mm. Pl. 33 : 41.

K. 13341 : 60. Small jade stone, light-green and brownish-red. At the thinnest end a V-shaped hole. Pendant. L. 19 mm. Pl. 34 : 60.

K. 13341 : 61. Oblong jade stone of a beautiful reddish-brown and greenish colour. At the thinner end a V-shaped hole. Pendant. L. 42 mm. Pl. 34 : 54.

K. 13341 : 62-63. Two pendants of white jade, nearly spherical with a semi-circular loop. L. 21 mm. —: 62 Pl. 34 : 52.

K. 13341 : 64. Pendant of light-green jade, the same type as —: 62—63, but of inferior workmanship. L. 14 mm. Pl. 34 : 53.

K. 13341 : 65. Spherical bead of translucent chalcedony. Diam. 7 mm.

K. 13341 : 66. Barrel-shaped bead of brown and white opal. A hole is drilled from both ends, but obliquely, so that they do not meet properly. L. 14 mm. Diam. 8 mm. Pl. 34 : 42.

K. 13341 : 67. Oblong, octagonal bead of carnelian. L. 20 mm. Pl. 34 : 1.

K. 13341 : 68. Flat, hexagonal bead of carnelian. Diam. 14 mm. Th. 6 mm. Pl. 34 : 2.

K. 13341 : 69-72. Four spherical beads of carnelian. Diam. 12—7 mm. Pl. 34 : 3—6.

K. 13341 : 73. Small polygonal bead of carnelian. Diam. 7 mm. Pl. 34 : 7.

K. 13341 : 74-76. Three spool-shaped carnelian beads. L. 11—13 mm. Pl. 34 : 8—10.

K. 13341 : 77. Spool-shaped, hexagonal bead of flamy carnelian. L. 18 mm. Pl. 34 : 11.

K. 13341 : 78. Big spherical bead of malachite, one side defective. Diam. 21 mm. Pl. 33 : 17.

K. 13341 : 79. Disc-shaped turquoise bead with eccentric hole. Diam. 11 mm. Th. 3 mm. Pl. 33 : 21.

K. 13341 : 80-81. Two small pierced pieces of malachite.

K. 13341 : 82. Rectangular flat, hexagonal bead of greenish-blue glass. L. 13 mm. Pl. 33 : 20.

K. 13341 : 83. Oblong bead of lapis lazuli with rounded edges. L. 13 mm. Pl. 33 : 27.

K. 13341 : 84. Cylindrical bead of lapis lazuli. L. 7 mm. Pl. 33 : 26.

K. 13341 : 85. Small drop-shaped pendant of lapis lazuli. A hole has been begun from each side at the broad part and perpendicular to the suspension hole. L. 11 mm. Pl. 33 : 24.

K. 13341 : 86. Spool-shaped bead of lapis lazuli. L. 14 mm. Pl. 33 : 25.

K. 13341 : 87-89. Three irregular beads of amethyst.

K. 13341 : 90. Small coral branch, through which one hole has been drilled. L. 18 mm.

K. 13341 : 91-97. Seven small coral beads.

K. 13341 : 98. Small coral branch, pink.

K. 13341 : 99-100. Two round beads, reddish-brown material. Diam. 14 mm. —: 99 Pl. 33 : 15.

K. 13341 : 101. Spool-shaped, flattened bead of honey-coloured glass. L. 12 mm. Pl. 34 : 15.

K. 13341 : 102-103. Two small beads of gilt glass. L. 7 and 5 mm. Pl. 34 : 16—17.

K. 13341 : 104. Polygonal bead of dark-blue glass. 8×9 mm. Pl. 34 : 18.

K. 13341 : 105. Small irregular bead of green glass. Pl. 34 : 19.

K. 13341 : 106-107. Two small double-beads of light-green glass. L. 4 mm. Pl. 34 : 20—21.

K. 13341 : 108. Double-bead of dark-blue glass. L. 7 mm. Pl. 34 : 22.

K. 13341 : 109-115. Seven small glass beads, green, blue and black. Spheroids or bi-conical. Pl. 34 : 23—29.

K. 13341 : 116. Fragm. of small tube of green glass. Diam. 4 mm. Pl. 34 : 30.

K. 13341 : 117. Small thin bead of green glass. Diam. 7 mm. Pl. 33 : 34.

K. 13341 : 118. Small irregular bead of brown paste (?) with six ridges. Diam. 7 mm. Pl. 33 : 35.

K. 13341 : 119-120. Two spherical beads of white glass. Diam. 6 and 9 mm. Pl. 33 : 36—37.

K. 13341 : 121. Nearly spherical bead of green glass. Diam. 11 mm. Pl. 33 : 38.

K. 13341 : 122. Bead of cobalt-blue paste(?). Diam. 9 mm. Pl. 33 : 39.

K. 13341 : 123. Nearly spherical bead of blue-green glass. Diam. 12 mm. Pl. 33 : 40.

K. 13341 : 124. Spool-shaped bead of streaked glass, white, dark-violet and black. L. 23 mm. Diam. 9 mm. Pl. 33 : 28.

K. 13341 : 125. Small double-bead of brown glass with white veins. L. 6 mm. Pl. 33 : 33.

K. 13341 : 126-129. Four small beads of black glass with white veins. Diam. 5—7 mm. Pl. 33 : 29—32.

K. 13341 : 130. Eye-bead, nearly spherical, with six "eyes" consisting of a yellow centre bordered by a red and a white line. Diam. 11 mm. Pl. 33 : 16.

K. 13341 : 131. Fragm. of barrel-shaped bead of blue glass with yellow veins in the surface layer.

K. 13341 : 132. Fragm. of mosaic glass bead, green (in two shades) inset with red ovals having white centres. Pl. 33 : 18.

K. 13341 : 133. Fragm. of flat bead or pendant of black glass with inset of white, yellow, red and blue spots. Pl. 33 : 19.

K. 13341 : 134-135. Two small hollow bronze beads. Diam. 6 and 8 mm.

K. 13341 : 136. Two small fragmentary beads, one of turquoise, one of greenish glass.

Objects collected on the 'Tati' surfaces.

K. 13342 : 1-12. Twelve sherds of large earthenware vessels, with designs of garlands and straight bands incised with a dentated instrument. The ware is rather coarse, reddish, brown or dark grey. —: 12 Pl. 37 : 2.

K. 13342 : 13. Sherd, probably of the same vessel as —: 12. Besides the above-mentioned pattern an incised figure recalling a Tibetan character. Pl. 37 : 3.

K. 13342 : 14. Small sherd of an earthenware vessel with an incised figure partly recalling Tibetan writing. Pl. 37 : 1.

K. 13342 : 15-24. Ten sherds from earthenware vessels, more or less decorated with incised lines or impressed circles. The ware is light yellow, red, brown or grey. Most of the fragments are from large vessels.

K. 13342 : 25. Two joined sherds from a large earthenware vessel. The outside is grey, the inside brownish. Covered with irregular zig-zag impressions recalling basket-work. Pl. 36 : 7.

K. 13342 : 26. Fragm. from the rim of an earthenware pot. Brown ware with intermixed coarse-grained sand. Decorated with a wavy line both on the inside of the wide mouth and on the shoulder.

K. 13342 : 27. Small fragm. from the rim of an earthenware vase. Dark grey, fine-grained ware, decorated with wavy lines.

K. 13342 : 28. Small fragm. from the rim of an earthenware vessel of reddish brown ware. Immediately below the rim a raised band with vertical grooves. Prehistoric ?

K. 13342 : 29. Fragm. from the rim of a small earthenware ewer with a marked lip. Thin, red ware.

K. 13342 : 30-31. Two fragm. from the rims of two large vessels. Reddish and brown earthenware.

K. 13342 : 32. Sherd from a large earthenware vessel of brown to grey ware intermixed with sand. A horizontal lug. Decorated with garlands and straight bands incised with a dentated instrument.

K. 13342 : 33. Fragm. from the rim of a large earthenware vessel. Below the rim a stout horizontal lug. Thick, reddish-brown ware.

K. 13342 : 34-35. Two fragm. from the rims of two smaller earthenware jugs with a handle at the rim. Red ware. —: 34 is similar in shape and ware to K. 13344. (Pl. 35 : 1).

K. 13342 : 36. Broad handle from a larger earthenware jug of dark-grey to red ware intermixed with sand.

K. 13342 : 37-41. Five loop handles from fairly large earthenware vessels. Reddish or grey, sandy ware.

K. 13342 : 42. Handle of an earthenware pot; has been attached horizontally. Brownish ware. Pl. 37 : 4.

K. 13342 : 43. Small fragm. of an earthenware vessel with a fragmentary handle.

K. 13342 : 44a-k. Sherds from a big earthenware vessel of rather thin, dark-grey ware (after washing some of the sherds have acquired a yellowish colour on the outside). Round the shoulder runs an applied border with impressions forming a zig-zag pattern. Below this there have been groups of hatched triangles with the points downwards, and above there has been a more freely executed (floral ?) pattern. Pl. 36 : 5.

K. 13342: 45-50. Six sherds from large earthenware vessels.

K. 13342: 51. Sherd from the thick bottom of a pointed earthenware vessel (or tripod). Dark-grey, hard ware.

K. 13342: 52-53. Two small sherds of thin-walled earthenware vessels. Red and reddish-brown ware, possibly prehistoric.

K. 13342: 54. Fragm. of an earthenware disc with two rows of round impressions along the edge. Pl. 37: 9.

K. 13342: 55-58. Two complete and two fragmentary spindle whorls or sinkers made of sherds of earthenware vessels. Diam. 48-28 mm.

K. 13342: 59. Small fragm. of earthenware vessel with rounded outline.

K. 13342: 60-63. Four pebbles of greenstone and sandstone with oval section. May have been used as grindstones and pestles.

K. 13342: 64. Flat, oval pebble of sandstone, probably used for smoothing.

K. 13342: 65. Fragm. of a whetstone of slate.

K. 13342: 66. Small fragm. of a small core of brown flint.

K. 13342: 67. Seven flint chips, partly used for striking fire.

K. 13342: 68. A piece of slag and two iron fragm.

K. 13342: 69. Fragm. of a glass bowl, translucent and uncoloured.

K. 13342: 70-71. Two fragm. of probably circular, somewhat conical small glasses from vessels of unknown shape. Pale yellow and green glass.

K. 13342: 72. Ten small fragm. of glass vessels. Pale green or uncoloured.

K. 13342: 73. A few small fragm. of bronze, sheet and refuse from casting.

Grave 1.

K. 13343: 1. Earthenware jug with a stout handle running from rim to shoulder. On the shoulder an incised zig-zag line and below this a wavy line. Nearly black ware. H. 24.5 cm. Diam. of rim 13.5 cm., at the widest part 20 cm., the flat bottom 13.2 cm. Pl. 35: 4.

K. 13343: 2-5. Four rectangular bronze pieces with a rivet hole at each end, the rivets partly preserved. Probably fittings for some wooden case or suchlike; they have very likely been joined in the manner shown in Fig. 45. 55×15 mm. 55×18 mm. 56×17 mm. and 53×13 mm. L. of best preserved rivet 21 mm.

Grave 4.

K. 13344. Earthenware jug, restored out of several fragm.; one part spoiled by weathering. Of the same type as K. 13343: 1 but with less accentuated profile. Light reddish ware intermixed with coarse-grained sand. H. 21 cm. Diam. of rim 9.8 cm. Widest part about 15.5 cm. Diam. of the flat bottom about 9.5 cm. Pl. 35: 1.

Grave 6.

K. 13345: 1. The main part of a weathered earthenware bowl with low, slightly concave wall and rounded bottom. The surface of the ware is blue-black, the fracture is brick red. Diam. about 17 cm. H. 7—8 cm. The same type as K. 13337—39. Fig. 47.

K. 13345: 2. The main part of a wooden bucket made of a hollowed-out trunk, probably poplar. Round the lower edge a row of holes for fastening the bottom, which might have been of leather. The remaining attachment for the handle projects obliquely above the rim, following the grain of the wood. Below the attachment is a primitive, engraved animal figure, probably deer. Fig. 48. H. 15 cm. Diam. 13—16 cm. Th. of wall 1 cm. Pl. 32: 2.

K. 13345: 3. Thirteen teeth of a wooden comb. The two outer teeth are stouter than the rest, and have five deep notches on their upper part (to receive strings for tying the teeth together?) The other teeth have apparently been inserted in some perishable material. L. 112 and 95—93 mm. Fig. 49.

K. 13345: 4. Part of fire-drill(?). A wooden whorl with a broken-off peg through the central hole. The preserved end of the peg is charred. Diam. of whorl 48 mm. Th. 15 mm. Pl. 32: 3.

K. 13345: 5. Two small pieces of thick, plaited, woollen braid, blue-green. W. 3.5 cm. Pl. 32: 10.

K. 13345: 6. Two parts of a wooden peg with square section. From one side a row of fine holes has been drilled, the other sides are decorated with carved V-shaped lines. 130×10×9 mm.

2. *VASH-SHAHRI.*

When travelling from Charchan to Charkhliq, in August 1928, I stopped at the Kohna-shahr of Vash-shahri for one day. This ruined site is of the same 'Tati' character as the Charchan Kohna-shahr, but it presents quite a different aspect as the ground is covered, to a very large extent, with huge, fantastic tamarisk mounds, Pl. XX a. These accumulations, which reach a height of 6—7 m., have in some places preserved small remains of brick structures. The ground is very sandy, and on the surface is exposed *débris* of various nature from the time of the occupation of the site.

It has been identified with Hsin-ch'eng of the T'ang Annals, a place which was also called Nu-chih and is said to have been founded by K'ANG YEN-TIEN, who was a Sogdian chief in the period 627—649. It is situated about 9.5 km. to the west of the present village of Vash-shahri. I never got an opportunity to determine the extent of the 'tati' *débris,* only that there were two separated 'tatis', which I called I and II, the former being situated about 3.5 km. to the NW of the latter. According to STEIN, the extent of the 'tati' surface is 1 × 1/2 mile.

The coins found by STEIN give a clue to the duration of the settlements here. He found three K'ai-yüan coins (618—627) an illegible T'ang coin and five Sung coins ranging between 1023 and 1107. I myself recovered a fragment which might be from a late Wu-ch'u coin, five indeterminable fragments of Sung or Yüan coins and one complete Ming dynasty coin: a T'ien-yüan-chung-pao which was issued between 1378 and 1388. It is likely that this early Ming coin was dropped here after the abandoning of the site.

The other metal objects are hardly worth mentioning; they consist of trifling fragments of bronze fittings and the like.[1] A small pendant is of lead, Pl. 38: 16.

There are some beads of glass and opal, Pl. 38: 6—15, a triangular pendant of white agate, Pl. 38: 17, resembling those from Charchan, a ring of a *Quadrula* shell, Pl. 38: 3, and a diminutive bird figure of glass or frit with a vertical hole for a string, Pl. 38: 4. The latter object might be compared with the small bird figures from Khotan (Montell 1938, Pl. VI: 10—11) though the latter are of metal.

Sherds of glass vessels of poor quality, greenish and only semi-translucent, are probably of local make from the Tarim Basin.

[1] HEDIN purchased an old copper pitcher when passing through the ruined site of Vash-shahri. It is depicted in Hedin 1898, II p. 223. In the Ethnographical Museum in Stockholm it bears the number 03.11.88. Height 14 cm., widest diam. 10.7 cm. The body is nearly globular with a well-shaped neck with a plain moulding round the middle. A strong handle with an indistinct pattern of V-shaped grooves runs from the rim to the widest part of the body. There is a stout spout with eight-sided section; its tip is damaged, a piece of the rim is broken away and there is also a small hole in the bottom. The surface has a dark brownish, uneven colour. The vessel has been used in modern times, possibly as a tea-pot. To give any absolute date for the manufacture of this rather handsome vessel is not so easy, but it may possibly be placed within the last five centuries of the first millenium A. D. Its origin is non-Chinese.

The few sherds of glazed wares, on the other hand, are certainly importations from China, and more precisely from Honan. There are pieces from dark greenish-blue Chün bowls and from Celadon and Ying-ch'ing wares ranging in colours from light greenish brown, light bluish-green to whitish green. A small sherd with green glaze must be labelled as T'ang ware. The others can safely be attributed to either the Sung or the Yüan dynasty. STEIN'S collection contains about the same kind of wares.

The coarse, unglazed pottery is very similar to that from Charchan. Only sherds were found, no complete vessels. Of a certain interest are the potsherds bearing a Tibetan character carelessly incised with some coarse tool, Pl. 36: 9—10. In a way they form a part of the decoration, which otherwise consists of incised bands made with a dentated instrument. These bands are in the shape of arcs or garlands, as well as horizontal ribbons, Pl. 36: 1. They apparently originate from the time when the Tibetans ruled the Tarim Basin, as do the similar Charchan sherds.

Other potsherds have ornaments slightly resembling Tibetan characters, but as all are fragmentary we cannot be absolutely sure as to what is meant, Pl. 36: 2 and 6.

The potsherd Pl. 37: 6 is unique. It is made of a whitish clay and has a moulded ornamentation in high relief. Except in the colour of the ware it may be paralleled with the Khotan terra-cotta vessels, but these usually have their ornaments applied on the plain wall.

Pl. 36: 8 is from the shoulder of a largish jar of coarse earthenware, decorated with horizontal wave-lines incised with a dentated tool. A raised oval, of no particular use, somewhat recalls a cowrie.

Impressed circles occur on the rim and the neck of Pl. 36: 3, from a large jar. Similar ornaments are seen on Pl. 36: 4. Pl. 37: 5 has an incised wave-pattern.

Most of the handles are loop-shaped, and some of them have impressed ornaments. There are also lugs.

A lot of spindle whorls are made of potsherds; they denote that spinning formed an important part of the household activities here.

A small fragmentary tile, Pl. 32: 8, is hard to reconstruct. I have sometimes wondered if it could have been used as a support for the small conical smelting pots of which there is a specimen in my collection (K. 13346: 112) only 45 mm. high. From the Sung and Yüan ruins at Edsen-gol in Mongolia I collected several smelting pots of this diminutive size. The occurrence of refuse from bronze smelting is further evidence of local bronze casting.

A fragmentary mace-head of stone, Pl. 37: 10, has two parallels amongst the Lop-nor objects, as already pointed out. All three seem to have been intended as mace-heads and not weights or the like.

Three wooden combs call for some attention. They are all double-teethed. Pl. 38: 20 and 22 are very similar and have concave sides, whereas Pl. 38: 19 has convex sides. It is rather likely that they originate from destroyed tombs. STEIN

also found a wooden comb with two rows of teeth here (Stein 1921, V. S. 0041). It is interesting to note that the double-teethed comb shows about the same shape already at its earliest appearance. The single-teethed comb, on the other hand, attains many varying shapes. A double-teethed comb from Mohenjo-daro, for instance, of the third century B. C., shows close affinities with our Pl. 38:20 (Mackay, Pl. K, I).

The wooden peg Pl. 38:21, pointed at both ends, may be a spool for yarn. It recalls a specimen from Qara-khoja (Le Coq 1913, Pl. 64 r).

The Vash-shahri Kohna-shahr was apparently abandoned at a period not far removed from the twelfth century. The river at the time of the occupation must have flowed quite close to the old site, but whether the abandonment was due to the change in the course of the river or to some other cause is impossible to determine.

LIST OF ANTIQUITIES FROM VASH-SHAHRI

Kohna-shahr. Tati II around camp 23/8 1928.

K. 13346:1. Chinese coin, T'ien-yüan-chung-pao (1378—1388). Diam. 26 mm.

K. 13346:2. Fragm. of Chinese coin with broad edge. A "Chih" at the top. Possibly a Chih-tao-yüan-pao (995—998), as the character is in "grass writing".

K. 13346:3. Fragm. of Chinese coin with one and a half illegible characters.

K. 13346:4. Fragm. of Chinese coin with part of one of the two characters. Marked border. Probably a late Wu-ch'u.

K. 13346:5. Fragm. of Chinese coin, the lowest character is "Ta".

K. 13346:6-7. Fragm. of two Chinese coins.

K. 13346:8. Fragm. of small bronze buckle, oval.

K. 13346:9. Fragm. of small bronze object with a hole through the end.

K. 13346:10. Bronze ring with slanting sides. Diam. 22 mm.

K. 13346:11-15. Five small bronze fragm., fittings and suchlike.

K. 13346:16. Seven small bronze fragm., wire, balls and beads.

K. 13346:17. Various small bronze fragm. and refuse from casting.

K. 13346:18. Flat lead pendant, probably once rectangular. Decorated with indistinct lines. 18×15 mm. Pl. 38:16.

K. 13346:19. Small iron fragm. of a knife or the like.

K. 13346:20. Small bird figure of paste, light greenish blue and dark blue. Pierced with a vertical hole. L. 10 mm. Pl. 38:4.

K. 13346:21. White glass bead, spheroid. Diam. 9 mm. Pl. 38:7.

K. 13346:22-25. Four small beads of blue glass. Diam. 7—2 mm. Pl. 38:8—11.

K. 13346:26. Small bead of nearly black glass. Diam. 5 mm. Pl. 38:12.

K. 13346:27. Fragm. of honey-coloured glass bead. Cf. K. 13341:101. Pl. 38:13.

K. 13346:28. Spheroid bead of flamy opal. Diam. 8 mm. Pl. 38:14.

K. 13346:29. Cylindrical opal bead. L. 12 mm. Pl. 38:15.

K. 13346:30. A small glass ball and two fragm. of light-blue glass beads.

K. 13346:31. Main part of a flat ring of a thick shell, probably a *Quadrula*. Diam. 26 mm. Pl. 38:3.

K. 13346:32-34. Three fragm. of shells.

K. 13346:35. Wooden comb with two rows of teeth, coarse and fine, at opposite ends. The sides are convex. L. 77 mm. W. at ends 42 mm., at middle 71 mm. Pl. 38:19.

K. 13346:36. Wooden comb with two rows of teeth, coarse and fine, at opposite ends, both a little damaged. The side parts are concave. Both sides of the middle part have two

"eyes" consisting of concentric circles, and four small circles round them. L. 87 mm. W. at ends 77 mm., at middle 68 mm. Th. 7 mm. Pl. 38:20.

K. 13346:37. Wooden comb of the same type as the previous one, but the middle part decorated with only one "eye" surrounded by four small circles. L. 90 mm. W. at ends 84 mm., at middle 58 mm. Th. 10 mm. Pl. 38:22.

K. 13346:38. Wooden peg, pointed at both ends and with a moulding near the middle. L. 118 mm. Diam. 8 mm. Pl. 38:21.

K. 13346:39. Various greenish glass fragments, semi-translucent and of inferior quality.

K. 13346:40. Fragm. from lower part of a Chün-bowl. The thick blue-green glaze reached down to the foot-ring. Dark grey ware.

K. 13346:41. Small fragm. from rim of a Chün-bowl with light green-blue glaze and brownish rim.

K. 13346:42-43. Two small fragm. of olive green Celadon ware.

K. 13346:44. Fragm. of light green Celadon cup with wavy outer surface.

K. 13346:45. Fragm. from the bottom of a Ying-ch'ing cup. Pale green glaze. On the inside is a design of curved lines scratched in the white ware before glazing. The bottom is flat, the outside is partly glazed, the foot-ring is low and rather sharp-edged.

K. 13346:46. Small sherd from a Ying-ch'ing cup or saucer. Pale green glaze.

K. 13346:47. Small sherd of thin stone ware, brownish-green glaze on the outside.

K. 13346:48. Small sherd of T'ang ware, green glaze on both sides.

K. 13346:49. Sherd of an earthenware vessel of almost white ware and with a cast relief design (a ground-pattern of raised rings, floral design, a fish ? etc.). Pl. 37:6.

K. 13346:50-51. Two sherds of earthenware vessels with a raised band of oblique impressions. Coarse red ware.

K. 13346:52-53. Two sherds of earthenware vessels with impressions made with a peg wound with string. Red ware.

K. 13346:54. Small sherd from an earthenware vessel with small round impressions. Coarse brownish ware.

K. 13346:55. Fragm. from rim of an earthenware jug with high neck and a row of impressed circles. Coarse red ware. Pl. 36:4.

K. 13346:56. Fragm. from rim of a large earthenware jar. Below the short, wide neck and on top of the rim a row of impressed circles. Coarse red ware, 12 mm. thick. Pl. 36:3.

K. 13346:57. Sherd from the shoulder of a big earthenware jar. Two rows of incised garlands made with a dentated instrument, between horizontal lines; a vertically applied raised oval with one longitudinal and five transversal grooves (depicting a cowrie ?). Coarse red ware, the outer surface yellowish. Pl. 36:8.

K. 13346:58-62. Five sherds from large earthenware vessels; thick, coarse, brick-red and grey ware, decorated with carelessly incised garlands and bands consisting of several parallel lines. —:58 Pl. 36:1.

K. 13346:63. Sherd from rim of a large earthenware jar, decorated with arcs incised with a dentated instrument. Coarse, thick, red ware.

K. 13346:64-65. Two sherds from large earthenware vessels, decorated with straight bands and garlands or arcs incised with a dentated instrument, and a figure recalling a Tibetan character. Coarse, brick-red ware. Pl. 36:9—10.

K. 13346:66. Sherd from shoulder of a large earthenware jar with an irregular, incised figure. Coarse, reddish-brown ware 16 mm. thick. Pl. 36:6.

K. 13346:67. Sherd of earthenware vessel with an irregular, incised figure. Coarse, brick-red ware. Pl. 36:2.

K. 13346:68. Sherd from earthenware vessel with traces of an incised, irregular figure. Light grey ware.

K. 13346:69-74. Six sherds from large earthenware vessels with roughly incised lines, straight or wavy. Coarse ware, brick-red or brown.

K. 13346:75. Large sherd from a bulky earthenware jar with a stout handle. Half obliterated ornaments of straight lines and arcs incised with a dentated instrument. Coarse, brick-red ware, less than 1 cm. thick.

K. 13346:76-78. Three loop-handles of earthenware vessels. —:76 has four impressed circles divided into quarters, —:78 has one similar ornament and a boss. Rather coarse, brick-red or reddish-brown ware.

K. 13346:79. Sherd from small earthenware jug with a handle emerging from the rim. Light-grey, thin ware.

K. 13346:80. Sherd from the rim of a wide earthenware jar without a neck. 3 cm. below the rim a horizontal lug. Coarse, red to brownish-red ware.

K. 13346:81. Sherd from the rim of a small jar of thin, reddish brown and red earthenware.

K. 13346:82. Fragm. of small, flat earthenware bowl, lamp ? reddish ware.

K. 13346:83. Sherd of large earthenware vessel with two holes after being repaired. Rather coarse, grey ware.

K. 13346:84. Small sherd of thin-walled earthenware vessel, light-grey.

K. 13346:85-110. Twenty-six spindle whorls of potsherds; seven complete, seven with unfinished hole, two without hole and ten fragmentary. Brick-red, brown and greyish wares. Diam. 50—23 mm.

K. 13346:111. Fragm. of a moulded, hollow earthenware object. 43×50 mm. Pl. 32:8.

K. 13346:112. Fragm. of a pointed melting-pot of grey ware, the inside has dark-brown glaze, the outside red glaze. H. has been about 4.5 cm.

K. 13346:113 Nearly half of a mace-head of light-grey granite. Diam. 82 mm. Present thickness 35 mm. Pl. 37:10.

K. 13346:114. Fragm. of a whetstone of brownish slate with suspension hole. Br. 4 cm.

K. 13346:115. Fragm. of small, pierced disc of white stone. Diam. 19 mm.

K. 13346:116. Thin pebble with unfinished suspension hole.

K. 13346:117-118. Two fragm. of light-green, partly polished jade.

K. 13346:119. Ten small flint pieces, probably for striking fire.

Tati I about 3.5 km. NW. of Tati II.

K. 13347:1. Fragm. of bronze rod, from the handle of a spoon or the like.

K. 13347:2. Various small bronze fragm.

K. 13347:3. Spherical carnelian bead. Diam. 7 mm. Pl. 38:6.

K. 13347:4. Triangular, wedge-shaped pendant of white, semi-translucent, striated agate. 31×25 mm. Pl. 38:17.

K. 13347:5-8. Four small sherds from earthenware vessels with incised, wavy lines. Grey, thin ware. —:6 Pl. 37:5.

K. 13347:9-12. Four small sherds of earthenware vessels with engraved, straight or garland-shaped lines, partly a lattice-pattern. Dark-brown and greyish ware.

K. 13347:13. Loop-shaped handle of an earthenware vessel.

K. 13347:14. Fragm. from the flat bottom of a large earthenware pot with large steam-holes. Dark-grey ware, brownish-red within.

K. 13347:15. Rounded sherd of red earthenware.

3. MIRAN.

As in the case of Charchan's Kohna-shahr, PRJEVALSKY was the first European in modern times to learn about the Kohna-shahr of Miran. But it seems as if he never visited the place. HUNTINGTON is the first to mention the presence of Buddhistic ruins here (Huntington p. 243). STEIN was the first archaeologist to examine these highly interesting remains. From the imposing mud-fortress he excavated many Tibetan records on wood, dating from the eighth and ninth centuries, and from the surrounding temples and stupas marvellous fresco paintings of an Indian character were recovered and saved from destruction; they date from the third to the fifth centuries A. D.

In Chinese historical records there prevails a certain confusion as to the old names of Miran. STEIN and GILES place Yü-ni at Miran. According to the Former Han annals Yü-ni was the capital of Shan-shan (i. e. Lou-lan). I-hsün, which LI TAO-YÜAN gives as the capital, is identified with Charkhliq. From a T'ang itinerary which PELLIOT has made available in translation it is evident that I-hsün in T'ang time was equal to Miran. Yü-ni had already before this been identified with Charkhliq by GRENARD. The records are thus far from precise as to the places Yü-ni and I-hsün. And the identifications of e. g. STEIN and HERRMANN stand in contradiction to each other. As Charkhliq and Miran are situated only 80 km. from each other the confusion is understandable.

Present day Miran is just a small village situated some kilometres to the west of the ruins, on the left side of the brook Jaghan-sai, which once watered the Kohna-shahr as can be seen from old canals.

In our days Charkhliq is by far the most prominent of the two places and may really be called a town, especially as it is the administrative centre of the modern Lop region. Its superiority in size is of quite modern date. According to local opinion the water-supply available in the Charkhliq river is about the same as that in the Miran stream, though certain ground conditions are more favourable at Charkhliq than at Miran. In my opinion the resources of Charkhliq are by far superior to those of Miran. As conditions have hardly changed during the last 2,000 years it seems plausible to assign greater importance to Charkhliq than to Miran also in the days of Lou-lan, and thus make Charkhliq the site of the capital.

One might tentatively reconcile the different views as to the situation of Yü-ni and I-hsün by supposing that they both fall inside the Charkhliq oasis. As Yü-ni is called 'The old eastern town' by LI TAO-YÜAN, it may have been the eastern part of the oasis, and I-hsün the western part. It seems maybe far-fetched to have two names for one and the same oasis but one of them may render a name in another language. There are many examples of this in modern Sinkiang. The present provincial capital, for instance, has no less than four designations: Urumchi, Ti-hua, Hung-miao-tze and Sinkiang-ch'eng, three of which are Chinese.

When WEI-T'U-CH'I, a son of a Lou-lan king, after a long residence in China returned to his native country of Lou-lan to ascend the throne, he is said to have requested the Emperor to plant a military colony in the city of I-hsün, where the land was rich and fertile, to collect the grains and to heighten the prestige of the king. In reality it seems more plausible that the Chinese themselves dispatched this military force to keep an eye on the new ruler of Lou-lan. However, the king would certainly have had these soldiers much closer at hand in the oasis in which he himself resided that 80 km. away from it. This circumstance points to the proximity of Yü-ni and I-hsün.

GILES is also on the same path of thought but he explains that the capital was removed from Miran (Yü-ni) to Charkhliq (I-hsün) when the new king returned.



a. The fortress in the Söget-bulaq valley as seen from ENE.



b. Interior of "tash-öi" on mountain-side near Shindi.

Pl. XX.



a. My camp among the huge tamarisk cones in the Kohna-shahr at Vash-shahri.



b. The burial site at Miran.

There remain discrepancies among the sources even with these explanations, and the question of Yü-ni and I-hsün can not be regarded as definitely solved.

There is very little doubt, however, that I-hsün of the T'ang annals is identical with Miran. The name was at that time applied to Miran instead of a part of the Charkhliq oasis, which then had the name Shih-ch'eng.

Other T'ang names of Miran is Ch'i-t'un-ch'eng (City of seven military colonies) or simply T'un-ch'eng. On the Tibetan records found by STEIN the place is called Nob-chun or Little Nob.

As I believe in the identification of Yü-ni with Charkhliq, and also want tentatively to locate I-hsün there, I rob Miran of its position as the one time capital of Shan-shan.

*

In September 1928 I paid a short visit to Miran in order to get an ocular impression of the ruins already excavated by STEIN. Unfortunately I did not take his publications with me on the 1928 expedition. The traces of his excavations were still easily seen. The very small rooms in the fortress, which served the Tibetan garrison as quarters, had been cleared from refuse by STEIN. Some drift sand had accumulated on the floors, but not to any great extent, considering the period of fourteen years that had elapsed.

TOKHTA AKHUN of Miran, formerly residing at Abdal,[1] and the faithful servant both of HEDIN and STEIN, accompanied me, and he presented me with a bead of gilt glass, Pl. 38: 5, and a small wooden slip with Tibetan writings, Pl. 38: 2. These objects he had found in the fortress of Miran after STEIN's departure. This small Tibetan record is unfortunately fragmentary and the reading of it is therefore difficult. I am indebted to Mr. W. A. UNKRIG for the following suggestions. It begins with a *pir-ka* i. e. "trial stroke". The two first words are possibly *bso mgon* (the guardian of the resting place), then follows a vertical stroke and probably a *gya do* (breast plate or shield) and a *pa* or *ma?*. The final signs can not be read. This fragmentary reading gives no proper sense.

From the ground around the fortress we picked up some pottery fragments among which a sherd of a small vessel with part of a Tibetan inscription is of some interest, Pl. 37: 7. Its fragmentary condition does not allow of any definite interpretation. It also starts with a *pir-ka*. The first letter is a *ca* or *tsa;* the three following characters are too fragmentary to be read. The fifth is certainly a *ka,* and the last one a *ro*. For this reading I am also indebted to the kind efforts of Mr. W. A. UNKRIG.

When TOKHTA AKHUN learned of my intention not to undertake any further excavations in the ruins, as this would scarcely have been worth while on ground so thoroughly examined by STEIN, he told me about a burial place a little to the north.

[1] As early as 1914 the Abdal people had moved to Miran, leaving their semi-nomadic settlement for more permanent ones, as attested by STEIN.

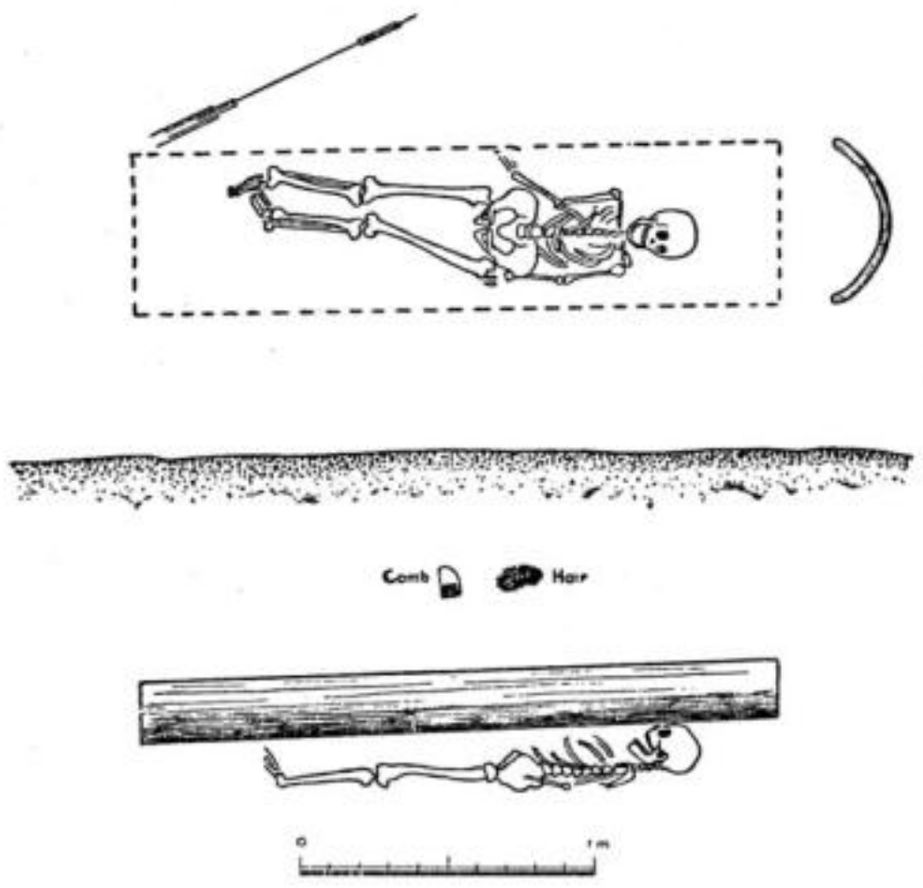


Fig. 50. Miran, Grave 1. Plan and section.

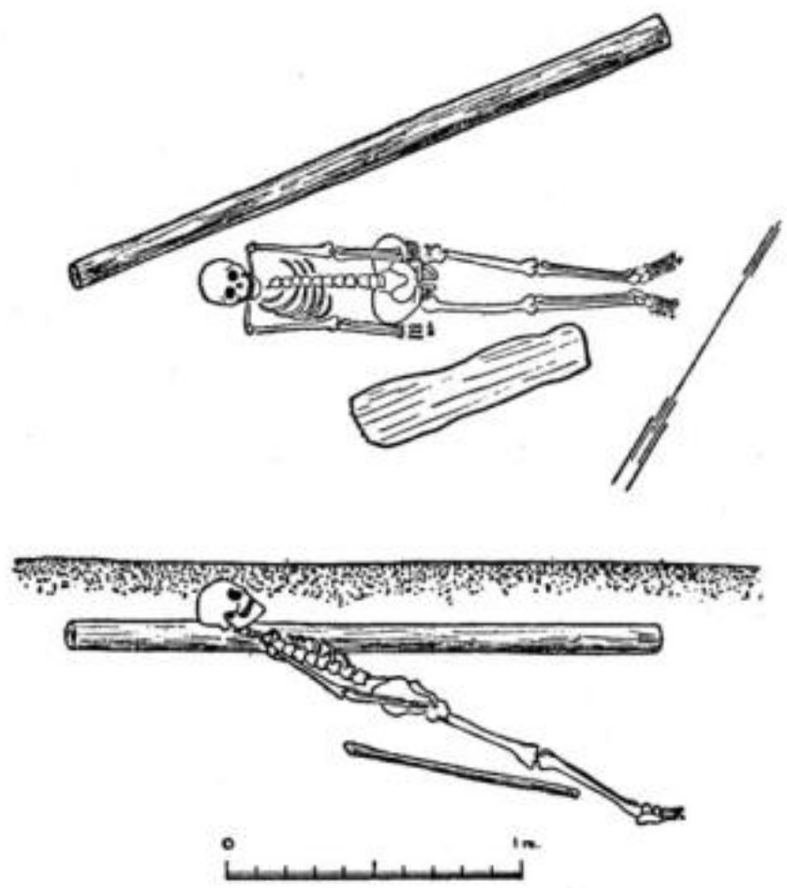


Fig. 51. Miran, Grave 2. Plan and section.

It was found to be situated amongst high tamarisk cones 2.5 km. NNE of the ruined fortress, and immediately to the west of a ruined watch-tower. According to my cyclometer measurement this tower should be situated between STEIN's ruins XII and XIV, nearly 800 m. WSW of XII (Cf. Pl. 29 in Stein 1921). The graves showed no marks above the ground, and were located by striking the flat sides of the spades against the ground; where it sounded hollow we dug, Pl. XX b. Here follows a description of the four graves discovered.

Grave 1.

0.7 m. below the surface we came across a "coffin" consisting only of half a hollowed-out poplar trunk, showing coarse marks of the carpenter's axe. It covered a well preserved skeleton resting on its back, Fig. 50. Near the left ear there was a plain bronze ring, Pl. 38: 1. 0.4 m. below the ground, and above the middle of the coffin, we found a bunch of coarse, dark-brown hair, and a half wooden comb of a type common in the Han dynasty in China, Pl. 38: 18.

Grave 2.

The skeleton in this grave was also well preserved, but was lying in a slanting position with the head 0.8 m. higher than the feet. There was no coffin, only a horizontal log and an obliquely placed board Fig. 51. The only things found were some trifling fragments of red, green and yellow silk fabrics lying around the chin, on the upper part of the chest and on the upper parts of the arms. Everything indicates that this grave was plundered long ago.

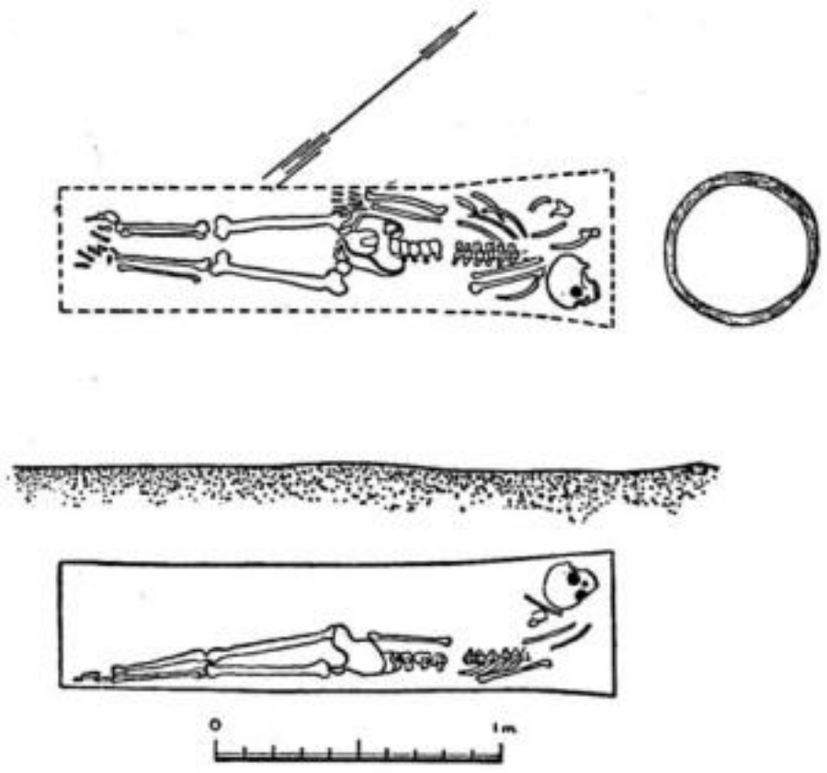


Fig. 52. Miran, Grave 3. Plan and section.

Grave 3.

The coffin in this grave, lying only 0.35 m. under the ground, was most curious, consisting of a hollow trunk that totally enveloped the skeleton. The upper part of the skeleton was disturbed, as if the deceased had been forcibly turned round in the coffin in such a way that the spinal column had been broken, and the cranium displaced. The trunk was open at both ends, and contained no funeral deposits. Fig. 52.

A similar coffin from Qum-darya (cf. p. 55) had both ends closed with wooden lids.

Grave 4

was of the same construction as Grave 1, the bones were displaced and the cranium broken. It contained nothing else and was apparently plundered.

The heads of the skeletons were placed in the following directions: N 25°E, S 60°W, N 40°E, S 45°W.

From Grave 1 the whole skeleton was taken, and from Grave 2 and 3 the craniums. They have been handed over to Prof. G. Backman for anthropometric examination.

Unfortunately the objects found in Graves 1 and 2 are too poor to allow of any definite chronological determination, but the comb Pl. 38: 18 is of the common Han type used in Lou-lan, and the silk fragments, too, might very well be of that age. It is therefore likely, though far from proved, that these graves belonged to the people inhabiting Miran in the Lou-lan time. The older Miran ruins date, as shown by Stein, from the third and fourth centuries A. D., but there are also two temples from the fifth century or a somewhat later date. The fortress was occupied during

the eighth and the ninth centuries by Tibetans. It is hardly probable, however, that these graves have anything to do with the Tibetans.

LIST OF ANTIQUITIES FROM MIRAN

K. 13349: 1. Small spheroid bead of gilt glass. Diam. 7 mm. Pl. 38: 5.

K. 13349: 2. Small bronze fragm., probably from a vessel.

K. 13349: 3. Fragm. of small wooden slip (label) with nearly effaced Tibetan characters written with ink on one side. L. 85 mm. Br. 10 mm. (has originally been broader, and has had a suspension hole). Pl. 38: 2.

K. 13349: 4. Bottom of wooden bowl, lathe-turned.

K. 13349: 5. Sherd from the neck of a red, earthenware jar with a row of impressed dots, and, below that, part of a line of incised Tibetan characters. Pl. 37: 7.

K. 13349: 6. Sherd of a large earthenware vessel decorated with a straight line and across it a garland incised with a three-toothed instrument. Coarse, red ware. Pl. 37: 8.

K. 13349: 7-8. Two sherds from earthenware jars with a handle emerging from the rim. Red and brownish ware.

K. 13349: 9. Sherd from the rim of a wide, rather big earthenware pot. Brownish ware.

K. 13349: 10-11. Two fragm. of small earthenware cups (lamps ?), light-red and yellow ware.

K. 13349: 12. Small fragm. of light-grey stoneware.

K. 13349: 13-16. Two complete and two fragmentary spindle whorls of potsherds.

K. 13349: 17. Small rounded potsherd, unfinished spindle whorl.

K. 13349: 18. Fragm. of a spindle whorl of sandstone. Diam. 37 mm.

K. 13349: 19. Unfinished spindle whorl made of a round pebble.

K. 13349: 20-22. Three chips of flintlike stone.

Grave 1.

K. 13350: 1. Bundle of dark-brown human hair.

K. 13350: 2. About half of a wooden comb with coarse teeth and parabolic back. L. 85 mm. Th. 17 mm. Pl. 38: 18.

K. 13350: 3. Ear-ring of plain bronze wire. Diam. 23—26 mm. Pl. 38: 1.

Grave 2.

K. 13351. Small fragments of silk fabrics, red, greenish and yellow, in plain weave.

4. CONCLUSION.

The three ancient sites discussed in Part IV, Charchan, Vash-shahri and Miran, are situated on the old highway which is called The Southern Road. It skirts all the oases on the southern border of the sand desert that covers the larger part of the Tarim Basin, and connects China and the West. Its first beginning lies hidden in obscurity. From the Chinese records we know of its existence in the early Han dynasty, and it became a significant channel along which the Chinese exported their precious silk and such other articles as were desired in the West. Just as was the case with The Northern Road, this Southern Road remained in use after the abandoning of The Road of the Centre and its importance must then have increased considerably. The attacks of the Huns were a more or less constant menace to the

northern branches of the Silk Road, but the Road of the South was hardly reached by these busy nomad hordes of the North. When also this southern road was made untrafficable to peaceful merchant caravans, the interruption was caused by the hostile and bellicose Tibetans, who advanced from their lofty mountain regions in the south. In 670 A. D. they made their first mighty expansion northwards, conquering the whole of the Tarim Basin. Driven back once they returned in 766, when also Kansu was conquered. They erected strongholds near to, or on, the Road of the South (e. g. Miran, Mazar-tagh), and the east-westerly traffic on the old trade routes was cut off. When the Tibetan power was definitely broken by the Uigurs soon after the middle of the ninth century, trade developed anew; and even among the scanty finds from Vash-shahri this turn of events is reflected in the occurrence of glazed wares, which must have been imported from Honan in Central China. Here travelled MARCO POLO in the thirteenth century, and it was in use along its whole extent from Kashgar to Tun-huang long after the time when the famous Venetian put his marvellous itinerary on record. It is really only one minor part of this road that has come into disuse in our own days: the stretch between Miran and Tun-huang. Though even this part is used by camel caravans in rare instances nowadays; that it does not see any heavy traffic is mostly due to the political conditions.

If the progress of modern civilization ever continues along the same lines as hitherto, and the Turkistan roads should be turned into motor highways, this Road of the South will hardly be considered, as there is too much drift sand along it. And the drift sand is the most troublesome obstacle to motor traffic. It thus seems as if this road had served its purpose as a channel for great transit trade. It will probably remain what it now is, a local road of very relative importance.

APPENDIX I.

NOTE ON THE INSCRIPTION ON THE SILK-STRIP No. 34:65.

By Prof. Dr. *STEN KONOW*, Oslo.

The small silk-strip 34: 65, which is 26.5 cm. long, bears, in the right hand corner, a short inscription, 5.75 cm. long and consisting of ten signs. They have been written with ink, and in the case of the first letter the ink has run out into the silk so that the head has become indistinct. There cannot, however, be any doubt about the reading. The preservation of the legend is remarkably good.

The alphabet is Indian Kharoṣṭhī, which we know from numerous documents found at the ancient sites along the southern route through Chinese Turkistan, where it seams to have been in current use during the first centuries of our era, so far as we can judge at present down to the latter half of the third century A.D. Later on it was replaced by the other ancient Indian alphabet, the Brāhmī, which had been introduced into the northern oases in the second century A. D., and of which there are also traces in the south even in the Kharoṣṭhī period.

We have not sufficient materials for judging, with certainty, about the gradual changes of individual characters during the period when this alphabet was in current use in the southern oases. Most of the documents have only been published in transliteration, and the table of letters prepared by the late Professor RAPSON[1] is useless for chronological purposes. We must therefore turn to dated Indian Kharoṣṭhī records in order to arrive at an approximate dating.

It has long been recognized that the closest parallel to the Central Asian Kharoṣṭhī is to be found in an inscription found at Wardak, about thirty miles to the west of Kabul, and now preserved in the British Museum.[2]

With regard to our record the similarity is very striking. We may compare the rounded top of the letter *ca,* which is angular in most Central Asian records; the straight top and the two long legs of *ya,* while the right hand leg in Central Asia is usually shorter than the other one; the modified form of *sa,* which it has become usual to transliterate *ṣa*, and which, in India, is met with for the first time in the Wardak inscription, and, above all, the form of the cerebral *ṭa*. In Central Asian re-

[1] Kharoṣṭhī Inscriptions discovered by Sir Aurel Stein in Chinese Turkestan. Transcribed and edited by A. M. Boyer, E. J. Rapson, E. Senart and P. S. Noble. Oxford 1920—1929. Plate XIV.

[2] The last edition in Kharoṣṭhī Inscriptions with the exception of those of Aśoka. Corpus Inscriptionum Indicarum. Vol. II. Part I. Calcutta 1929, pp. 165 ff.

cords it usually consists of a slightly rounded top-stroke, with a vertical slanting forwards and continued by a bottom stroke towards the right, in a convex curve. In our record the top is essentially the same, but it is continued at the left extremity in a continuous curve, opening backwards.

In Indian inscriptions the letter is rather infrequent, and the shape is quite different. In the Wardak epigraph, however, it is found, in the same form as in our legend, in the word *paṭiaśae*, Sanskrit *pratyaṃśāya* 'for the sharing', though it has not hitherto been recognized, having been transliterated as *ḍ*. From the view-point of Indian Kharoṣṭhī the Lou-lan silk inscription is therefore of importance as showing us a hitherto unknown form of the letter.

Now the distance between Wardak and the find-place of the silk strip is no doubt considerable, and it might be considered rash to draw any chronological inferences from the similarity of the script used in these different places. But there are several indications to show that the intercourse was not inconsiderable, and in the case of the Wardak record these indications even extend to the occurrence of the personal name *Marega*, which we only know from Central Asia. I therefore think that we are quite justified in assuming that our silk legend belongs to about the same time as the Wardak inscription.

The latter is dated on the 15th Artemisios of the year 51. There is a general consensus of opinion to the effect that the era is the same which we know from many Indian records and which starts from the inauguration of the famous king KANIṢKA. But there is no unanimity about the initial point of this reckoning. Most scholars apparently hold that we have to do with the well-known Indian Śaka era beginning in 78/9 A. D. and that the Wardak inscription accordingly goes back to about 130 A. D. It would lead us too far astray to repeat the arguments which, in my opinion, make it impossible to identify the KANIṢKA reckoning with the Śaka era. I am still convinced that we must assume an epoch for the former in A. D. 128/9, and that the Wardak inscription is dated on April 25, A. D. 179. Our silk strip would accordingly seem to have to be ascribed to the last decades of the second century A. D. And such a dating seems to agree with what we know from other sources.

In his Serindia, Oxford 1921, pp. 373 f., Sir AUREL STEIN describes a bale of silk found at Lou-lan. Its width is 18 3/4 inches. At one of the ruined watch-stations of the ancient Chinese limes west of Tun-huang he subsequently found two strips of undyed silk, and one of them bears a Chinese inscription which CHAVANNES translated 'a roll of silk from K'ang-fu in the Jen-ch'eng kingdom; width 2 feet 2 inches; length 40 feet; weight 25 ounces; value 618 pieces of money'. Sir AUREL adds: "The mention of the kingdom of Jen-ch'eng, which was established in A. D. 84 in the province of Shan-tung, still one of the chief silkproducing regions in China, proves the silk to date from the end of the first or the beginning of the second century A. D.

The find of two wooden measures enabled Sir AUREL to accurately determine

the value of the old Chinese foot. It was divided into ten inches, each 9/10", or 22.9 mm., and was accordingly 9 inches or 22.9 cm. long. The width of this silk roll was accordingly 19.83 inches or 50.38 cm., and the length 36 inches or 9.16 m.

These old measures seem to have remained in use for silk rolls down into the time of the Chin dynasty. Our silk strip is therefore evidently incomplete, only a little more than half the original width.

A welcome corroboration is furnished by another find described by Sir AUREL pp. 701 ff. It consists of two strips of silk, and one of them shows a width of about 19 ½ inches or close on 50 cm. It is, moreover, of importance because it bears an inscription in Brāhmī letters of the first, or more probably of the second century A. D. Sir AUREL has followed M. BOYER in reading it as *aiṣṭasya paṭa giṣṭi ṣapariśa*, which he explains as meaning 'a piece of cloth of aiṣṭa, 46 giṣṭi', taking aiṣṭa "to designate the particular quality of material of the silk contained in the roll", or as "intended to designate the purchaser or something of the sort", and giṣṭi to correspond to Pañjābī *giṭṭh* 'span', 46 designating the length of the cloth.

In his important paper Textilien im alten Turkistan[3] Professor LÜDERS has shown that the word *paṭa*, Sanskrit *paṭṭa*, which repeatedly occurs in the Central Asian Kharoṣṭhī documents, means 'silk roll', and, on p. 37, he corrects M. BOYER's reading *ṣapariśa* to *capariśa* 'forty', i.e. we again have the same length of the roll as in the Chinese inscription.

The reading of the legend can, however, be further improved. I am confident that we must read *śriraṣṭrasa paṭa dhiṣṭi capariśa* 'silkroll of Śrīrāṣṭra, forty dhiṣṭi'. Whether *Śrīrāṣṭra* is the name of the country of origin, as seems to be likely, or of the owner of the roll, is of comparatively small importance. It is of greater interest that we get a well-known word instead of the hypothetical *giṣṭi*. *Dhiṣṭi* is undoubtedly = *diṣṭi*, for which we regularly have *diṭhi* in the Kharoṣṭhī records from Eastern Turkistan, a designation of a measure, which evidently corresponded to the Chinese foot. The initial *dh* instead of *d* points to a spirantic pronunciation, which was evidently due to Iranian influence.[4]

The silk inscriptions mentioned above show what we ought to expect in our strip. And this expectation is fully borne out by an examination of the inscription itself.

The first letter is, as already remarked, a little blurred, but perfectly legible: *siṃ*. The second is clearly *dha*, with the stroke indicating length below, so that the reading *dhā* is justified. There is, however, an upward bend of the bottom, and if it had been continued a little farther and backwards, we should have to read *dhu*, and then, according to the Central Asian practice, combine this with the lengthstroke and read *dhū*. If we bear in mind the frequent coupling of more than one vowel-sign which we know from Central Asian Brāhmī records, it is, however, tempting

[3] Abhandlungen der preussischen Akademie der Wissenschaften, Jahrgang 1936. Phil.-Hist. Klasse. Nr. 3. pp. 24 ff.

[4] Cf. Acta Orientalia xiv, pp. 235 ff.

to read *dhuā*, but I have never come across any such coupling in Kharoṣṭhī, and it is safer to read *dhā*. Then comes *ca* with the length-stroke, i. e. *cā*, and further *riyaṣa*.

The first word is consequently *Siṃdhācāriyaṣa*, the genitive of *Siṃdhācāriya*, which can safely be considered as equivalent to Sanskrit *Sindhvācārya* 'the Sindhu teacher'. It is clearly the name of a man, and evidently denotes the person to whom the roll belonged.

The name is of some interest, because we know from Professor LÜDERS[5] that traditional tales connected with Western India and especially with Sindh were localized in Eastern Turkistan. Thus the Sindh town Roruka seems to have been identified with Lou-lan. It seems as if colonists from Western India, including Sindh, had settled down in Eastern Turkistan at an early date. Our legend may be taken to indicate that this settlement was not later than the second century A. D.

After the name comes an absolutely unmistakable *pa*. With the ensuing *ṭa*, which I have already mentioned, we accordingly get *paṭa* 'silk roll'.

Then follow two signs, which are clearly identical, though the last one is a little indistinct, and which must be the numeral symbol for twenty. As usual in Kharoṣṭhī records a repeated 20, 20 20, means forty. We thus have the same number, clearly indicating the length of the roll, as in the Chinese and the Brāhmī legends. And we must translate: 'Sindhuācārya's roll, forty (feet long)'. There was evidently a standard length, and also a standard width, of these ancient silk rolls.

[5] Sitzungsberichte der Preussischen Akademie der Wissenschaften 1930, pp. 7 ff; cf. my remarks Acta Orientalia xii, pp. 136 ff.

APPENDIX II.

MICROSCOPICAL AND CHEMICAL TESTS

By *HJALMAR LJUNGH.*
(Engineer of the State Railway Administration).

RED PAINT ON WOOD. (SAMPLE FROM CEMETERY 5).

The withered wood fragment has a thickness of about 8 mm. To judge from the curvature of the piece it must formerly have been part of a wide and round vessel. It is evident, too, that both inside and outside have been covered with a good lacquer,[1] containing a red mineral pigment.

Owing to the withered state of the wood it was easy to scrape off the lacquer. The flake powder gained in this way was boiled with strong hydrochloric acid until full solution was obtained. Then sulphuretted hydrogen was passed into the diluted solution. As no precipitate was formed, no lead or other heavy metals can be present. Ammonium sulphide precipitated greenish black iron sulphide, and all other indicating reactions proved that iron is the dominating substance, and that it occurs in the form of oxide.

It may therefore be assumed that the red pigment used was a calcined ochre.

NO 5. A:6. CONTENTS OF THE BASKET.

Agglomerates of rounded light red-brownish grains.

The appearance as well as the structure and properties of the grains coincide with those of the grains in the sample No. 5. F:1.

Thus it is to be assumed that also here the material in the basket is millet — in this case merely a little cleaner and more carefully manipulated.

NO. 5 F:1. CONTENTS OF THE BASKET.

Big lumps of mixed grains of sand (diam. 0.02—2 mm.) of almost all colours, and a large proportion of grains of some brownish organic matter (1—2 mm.), together with some few seeds in light-brown and dark-brown glossy hulls (2—2½

[1] To avoid any misunderstanding it should be mentioned that this 'lacquer' has nothing whatsoever in common with the Chinese lacquer otherwise referred to in this monograph. F. B.

mm.). The seeds are surprisingly well preserved, both within and on the outside. The bare grains have agglomerated in heaps. Nevertheless they are easily distinguishable as soon as the mass is softened in hot water. Here and there, however, the grains have formed such a solid mass as to be no more separable.

It is evident that the seed corns have grown on the Asiatic grass, *Panicum miliaceum (sanguineum)* or millet. Hence it is to be assumed that the contents of the basket were once millet grits with some corns still left unground. If the substance in the basket may thus be considered to have been millet-porridge it is of some interest to add that it also contains salt, sodium chloride, but traces only of soluble sulphates.

NO 5: 148. TEXTILE MATERIAL.

This sample, already washed, consists of two specimens of wool — one of them, dyed in a somewhat reddish, nice brown rather dark hue, is spun and twisted to form a two-strand twine, each strand containing about 180 filaments; the other one is spun and twined to a much looser and very bulky yarn of uncertain light brown-yellow colour.

The wool hairs have a thickness of 13—27 μ, and concerning the dark dyed hairs even a little more, or up to a trifle above 30 μ. Furthermore, as a matter of fact, we not infrequently found hairs in the mass with a length of more than 50 mm. All these hairs have a well preserved wavy structure and scaly surface, showing the characteristic serration of sheep wool fibres. There is no resemblance to the wool hairs of the camel. But it must be remembered that such a thin and really fine fleece is produced only by extremely good or improved sheep races. It is therefore a question as to whether this fleece has been shorn from the home sheep or imported — perhaps (this is in any case not quite impossible) with returning silk caravans from Bactria, where in those times very good fleece was procurable. Compare also "Sheep wool from the Kucha district"!

Yet the case is here still more complicated. Together with the fine fleece there are quite a number of pieces of thick hairs, 90—130 μ, many of which are crushed and spread out in one plane to something about treble the breadth. Some of them show a rather rapid transition to the thin form and appearance of the fleece hairs. These big hairs are mostly broken into pieces, in this condition resembling fragments of overhairs from an antelope's pelt. If they did belong to this animal, the fine fleece would perhaps be hairs from the fur, i. e. the underwool of a common antelope. As in Sweden it proved impossible to find an antelope skin with underwool(!) I applied to the British Museum and got from there top hairs and underhairs of two antelope skins *(Gazella gutturosa* and *Gazella Prjevalskii)*. I was thus enabled to establish the unmistakable and obvious difference between the fleece in question and the antelope fur, and I was also able to show that the underhairs

of the two antelopes are considerably coarser than the fleece of all common deer animals (family Cervidæ). It was also established that the big hairs of the sample are so-called "kemps" or "dead hairs" from sheep. But the presence of the "kemps" tells us that the wool must have been taken from an adult sheep and can not belong to the first and finest clip of the "lambs' wool" from animals of eight or ten months old.

Hence it is here assumed that the wool had been imported.

NO 34:70. WHITE POWDER IN A SMALL LEATHER-BAG WRAPPED IN WOOL-HAIRS.

The powder is in no wise fatty, but it can not be mixed with water — it does not get wet. On the other hand, it takes ether very readily, but nothing is extracted by this solvent. In reality there is no organic substance in the powder. If heated, the mass blackens only for a moment, giving off a distinct smell of burnt leather, then it assumes a very characteristic brown-yellow colour, as does the common painting-colour, white lead. Following this indication it was easy to show that the powder could be dissolved in nitric acid, with the exception of a considerable part of it which proved to be sand (probably from the desert), and another part which could be dissolved in strong hydrochloric acid and which proved to be antimonious oxide. Sulphur is not present.

When the lead nitrate was formed, carbon dioxide was set free. Then the nitrate compound was precipitated by sulphuric acid and determined as lead sulphate in the ordinary way. The powder possesses a high degree of dispersion and adheres strongly to rough surfaces. As the use of white lead as toilet powder was common in the civilised world as early as the 4th century B. C. we are justified in assuming that the find may have been once used for such a purpose.

Concerning the wool round the small powder-bag it may be added that among the hairs of the ordinary sheep wool I was surprised to find some bigger hairs showing a striking resemblance to the hairs of a gazelle, *Gazella gutturosa* of Kansu.

NO 36:5. FRAGMENT OF BASKET.

The fragment shows a simple wickerwork, i. e. a weaving in which the warp is rigid and the weft flexible.

The rigid warp here consists of pretty round (diam. 1.5—1.8 mm.) and straight strands of a dicotyledonous stem. All small twigs have been carefully removed, but in some places the bark is not peeled off altogether.

The flexible weft forms a plain weaving over single warps. The surface is smooth. Near the upper rim three triplets of neighbouring weft-strands are drawn

over a couple of warps instead of a single one, thus composing a band of three-strand twined work. There is a similar band round the bottom. On the inside of the basket this texture looks like a plain twined weaving.

There is still a third component of the basketwork. It is a minute round string (diam. 0.2 mm.) of a dicotyledonous root, almost certainly from an Artemisia plant. This little strand is not used everywhere, but only occasionally, especially for the strengthening here and there of the three-strand twined work. It may be added that this extra little strand has in any case not slipped out of a main weft one, but has been handled fully individually by the basket-weaver. Sometimes it has been wrapped on a warp strand, and there is no other wrapping anywhere in the weaving (-fragment).

It was difficult to find out what material the old basket-maker had used in her weft-strands. It was possible, finally, to establish that a good part of the material best corresponds to the "tsaghan deris" or "white grass" of the Mongols or *Lasiagrostis splendens* of the Botanical Museum. The stems of this grass have been split to form two or more strings to be used together with dicotyledonous root strings for weft strands — also in the three-strand twine. Indeed, as a matter of fact, the clever basket-weaver has used both of these heterogeneous materials together in every one of the weft strands. A whole series of cuts through the outsides of neighbouring weft strands have been made, and one is surprised to see (through the microscope) how grass and dicot. fibres alternate in a highly irregular manner. As a matter of fact a gleaming and glossy grass surface may be seen in many parts of the plain weaving, and dull root surfaces in the three-strand weaving. The wall has a net-pattern made of glossy grass applied on top of the main weft element and showing a marked contrast in colour to this. The result is thus a proof of the simple but good basketry of the primitive Lou-lan people.

In these microscopic examinations Professor G. Edman of the Pharmaceutic Institution has given me splendid assistance and sacrificed much time, for which I give him my sincerest thanks.

NO 38: 13. SCRAPINGS FROM A WOODEN TROUGH.

The principal matter is a non-granular, most shapeless mass of a light brown-grey colour.

If a small quantity of the substance is heated in a test tube in a Bunsen flame it gives off water, brownish tar, and an intense smell of burnt milk. What remains is a structureless black carbon.

The presence of lactic acid in the mass has been proved by the common iodoform reaction and the special Uffelmann test (carbolic acid with dissolved ferric chlor-

ide), and furthermore with an alcoholic solution of guajacol in the presence of strong sulphuric acid. The mass also contains some lime (Ca).

It may therefore be assumed that the substance in question was once sour milk.

SHEEP WOOL FROM THE KUCHA DISTRICT.

This wool sample is of course not an archæological specimen. Taken from a sheepskin in the market at Kucha, it is a simple product of to-day, to be compared to the wools of the grave finds. From this point of view, however, the sample is interesting.

The wool is pretty to look at: clean, dazzlingly white and good-sized. Moreover, it has an agreeable softness of handle. Is it then a more "cultivated" wool of a higher count than the two thousand years older wool from the graves? The microscopic examination does not answer in the affirmative. On the contrary, it shows that the hairs are coarser, with a thickness between 20 and 55 μ, that most of the hairs have a medullary core or pith like a white string, occupying half the breadth of the hair, and that the external scales (flattened horny cells) have a very irregular and split appearance. Most of the wool in the sample consists of overhairs taken from a sheep belonging to a good but none the less plain breed — producing a wool considerably inferior to the fine and dense wool used in the loin-cloth No. 5: 148.

WORKS CONSULTED

ABBREVIATIONS

AH	=	Archaeologia Hungarica.
BEFEO	=	Bulletin de l'École Française d'Extrême-Orient.
BMFEA	=	Bulletin of the Museum of Far Eastern Antiquities (Östasiatiska Samlingarna).
BSOS	=	Bulletin of the School of Oriental Studies (University of London).
Burl. Mag.	=	The Burlington Magazine for Connoisseurs.
ESA	=	Eurasia Septentrionalis Antiqua.
JASB	=	Journal and Proceedings of the Asiatic Society of Bengal.
JSFO	=	Journal de la Société Finno-Ougrienne.
OZ	=	Ostasiatische Zeitschrift.
Pal. Sin.	=	Palaeontologia Sinica.
RAA	=	Revue des Arts Asiatiques.
TP	=	T'oung pao, ou Archives concernant l'Histoire, les Langues, la Géographie et l'Ethnographie de l'Asie Orientale.
WBKKA	=	Wiener Beiträge zur Kunst- und Kulturgeschichte Asiens.

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Charchan. 2/3.



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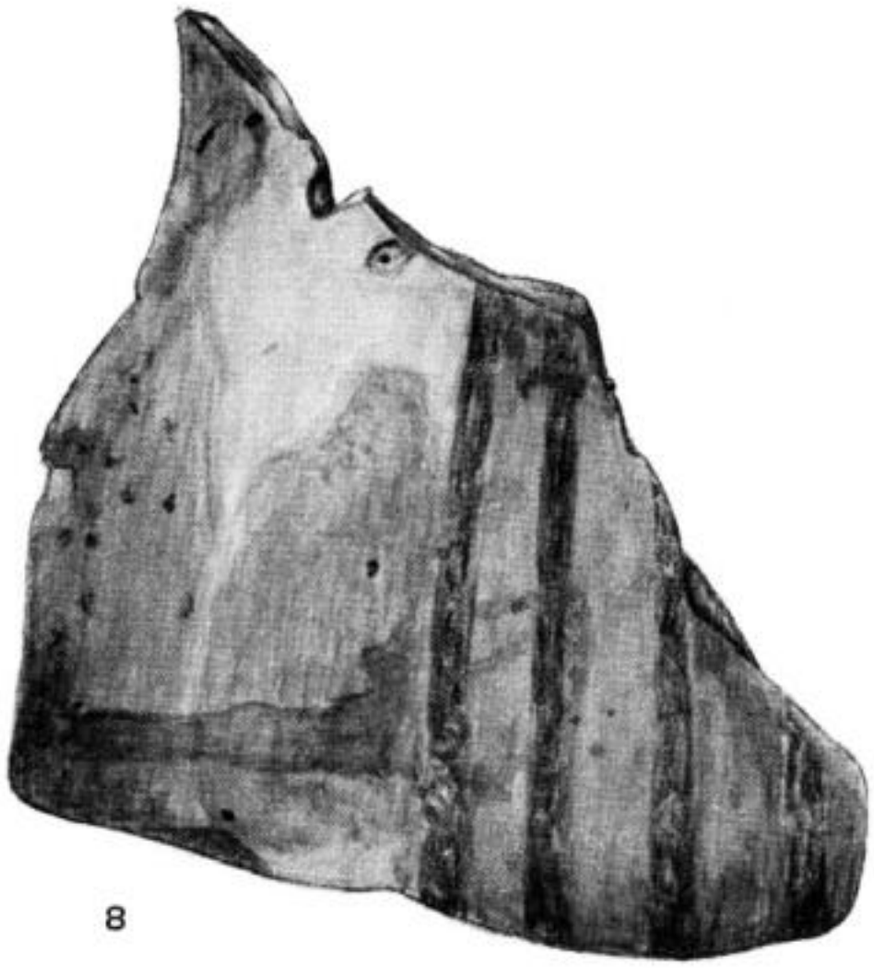
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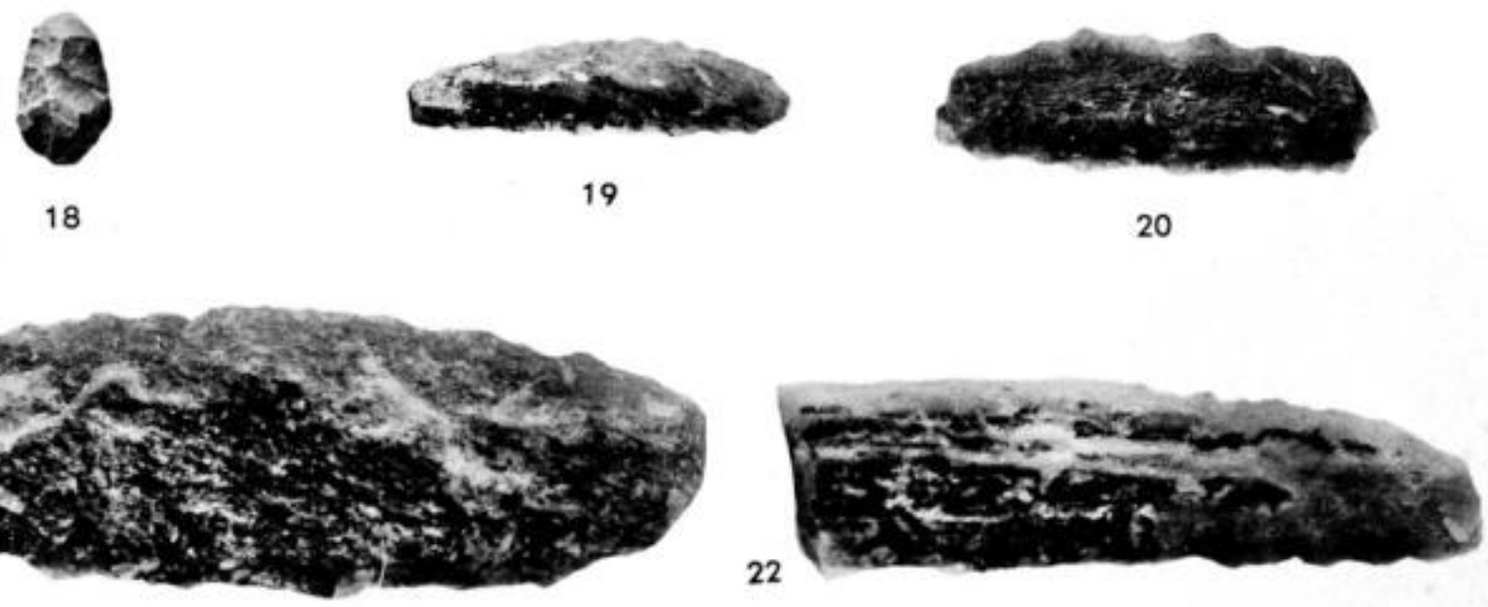
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Miao-erh-ku, Sengim-aghiz and Toqsun. Nat. size.

Pl. 3.







Singer.

Pl. 4.



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3a



3b



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Miao-erh-ku, Singer and Lop-nor sites.


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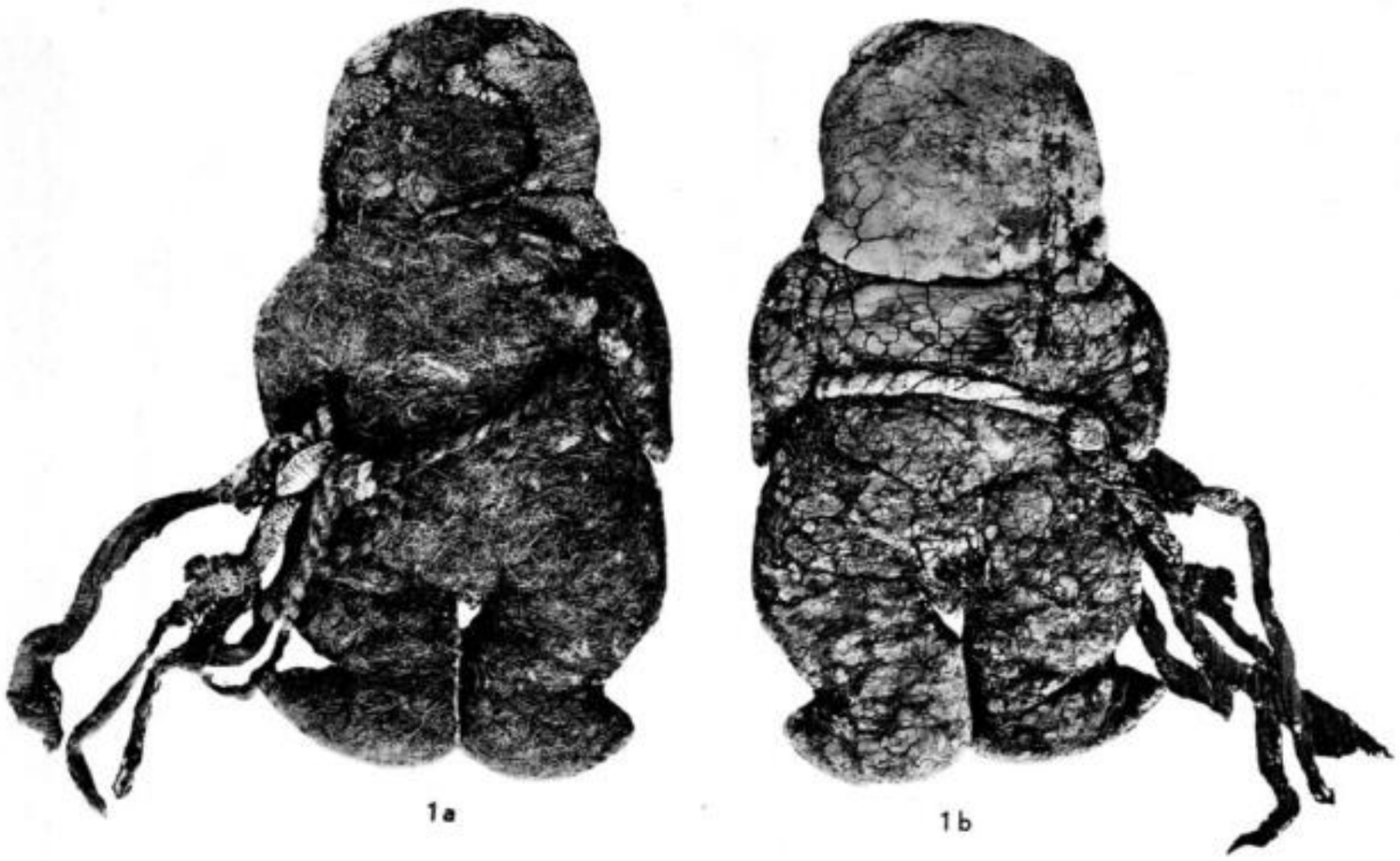

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Lop-nor sites.

Pl. 6.



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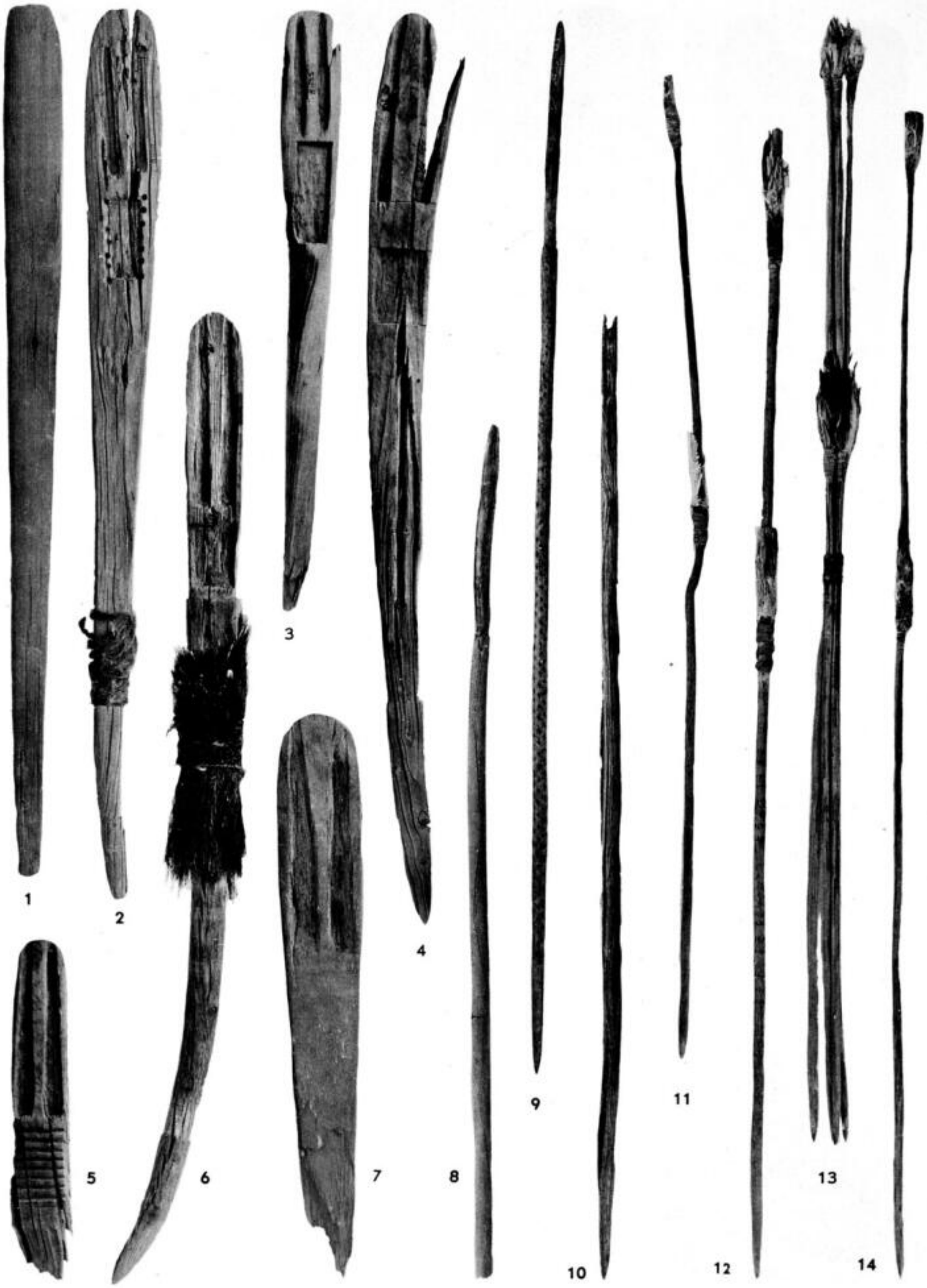


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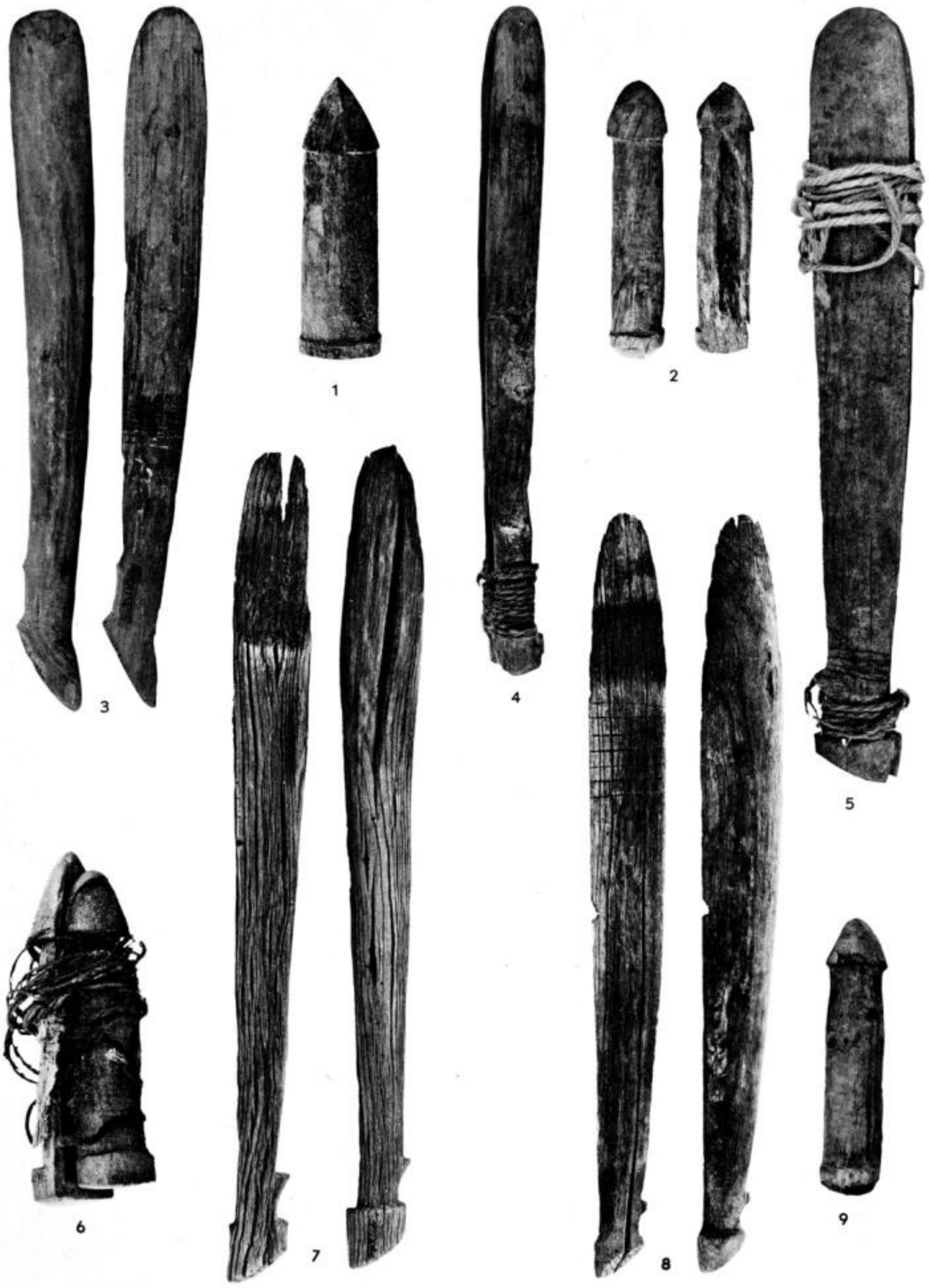
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Grave 10.



Cemetery 5.

Pl. 8.



Cemetery 5.



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Cemetery 5.

Pl. 10.



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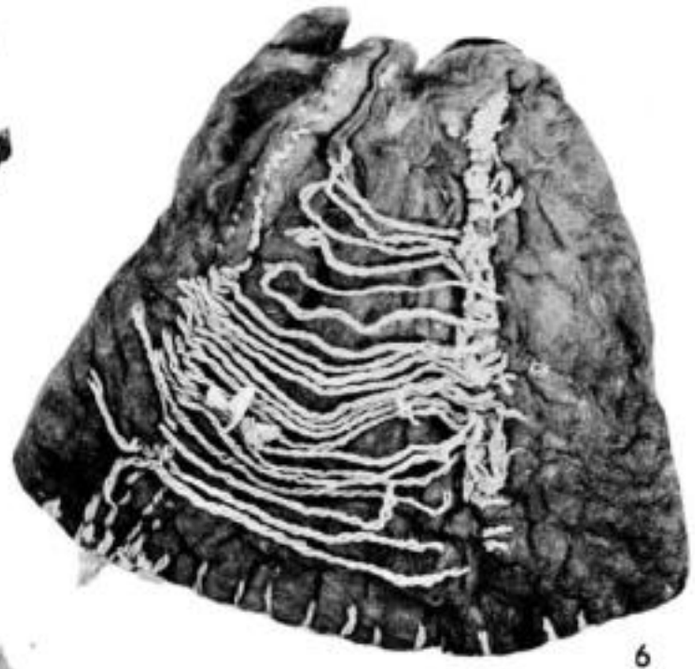
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Cemetery 5.



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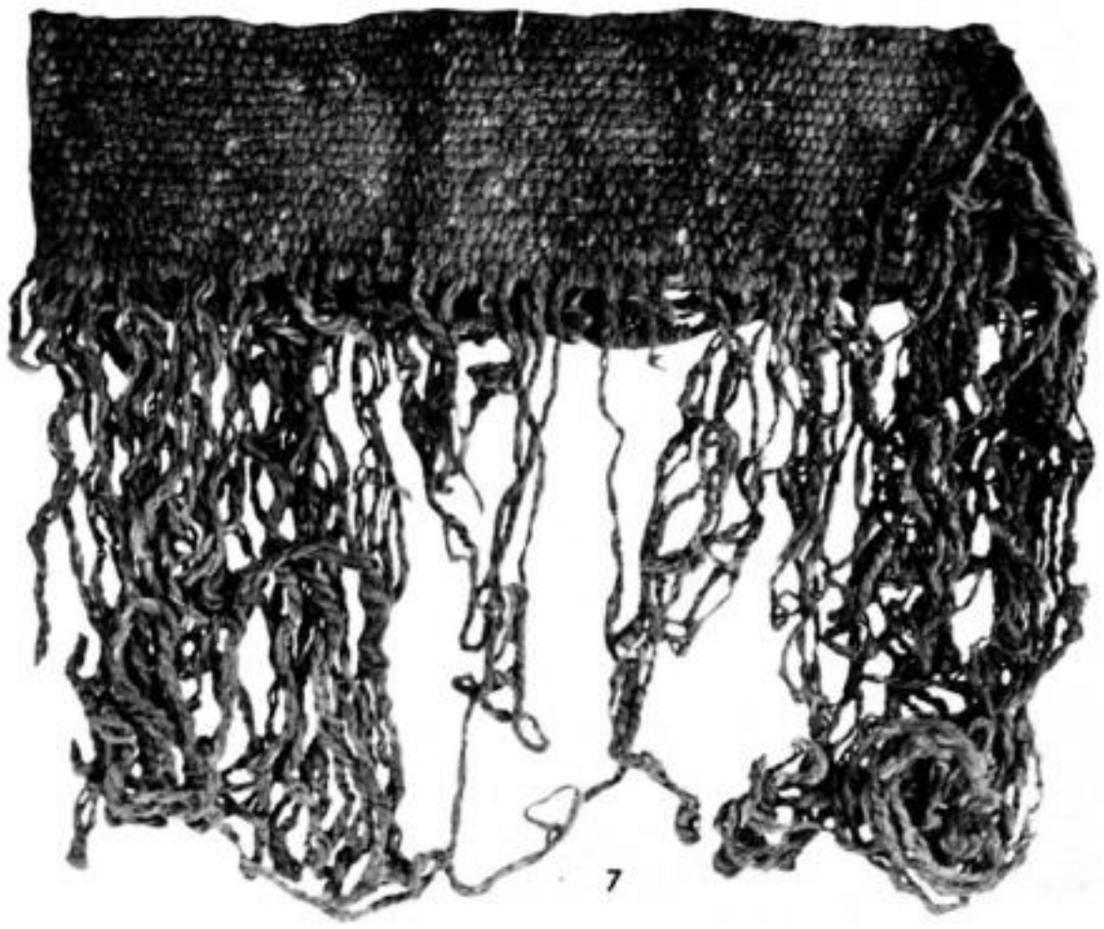
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Cemetery 5 and Grave 36.

Pl. 12.



Cemetery 5.



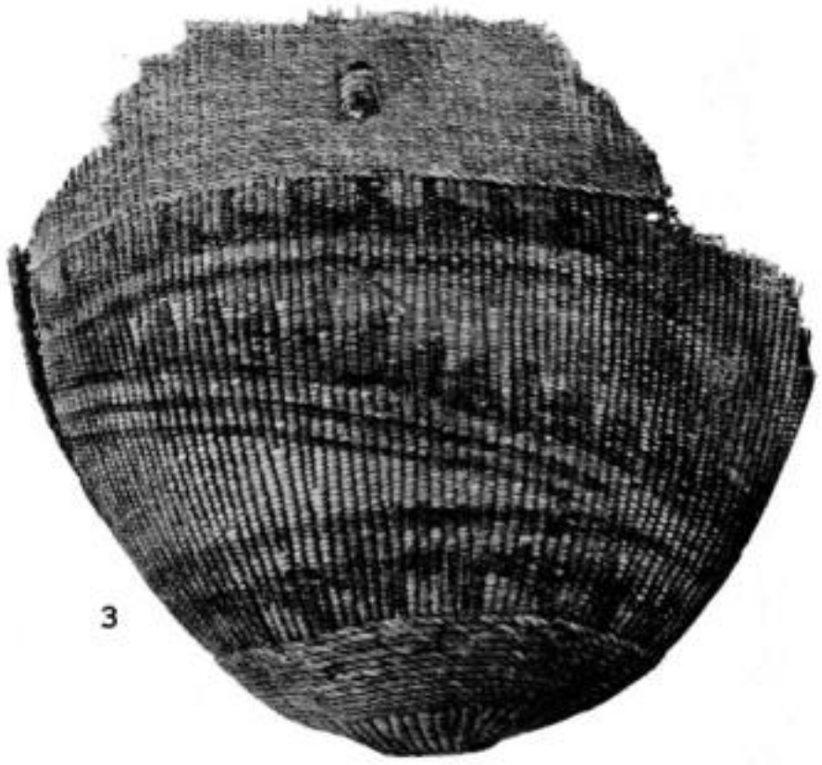
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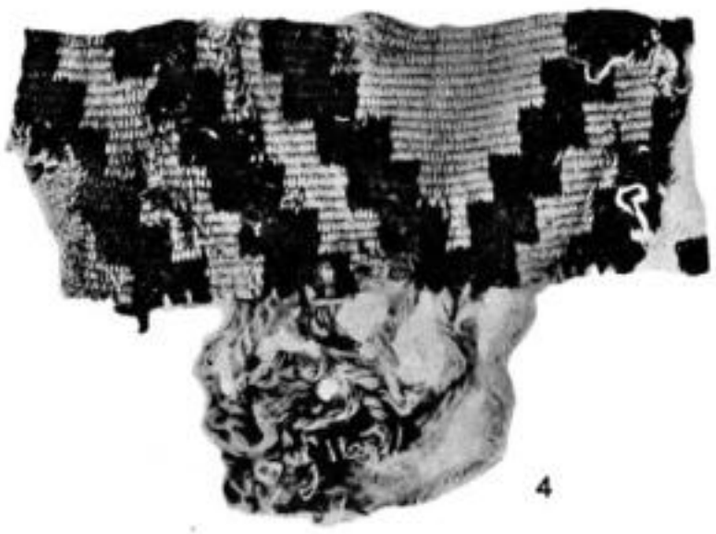
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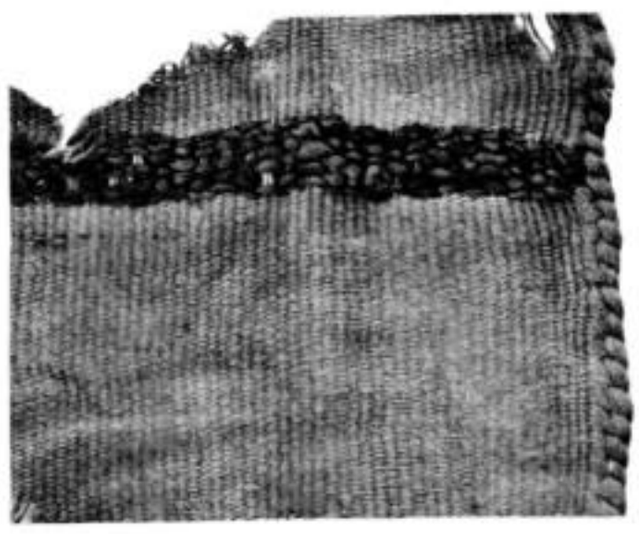
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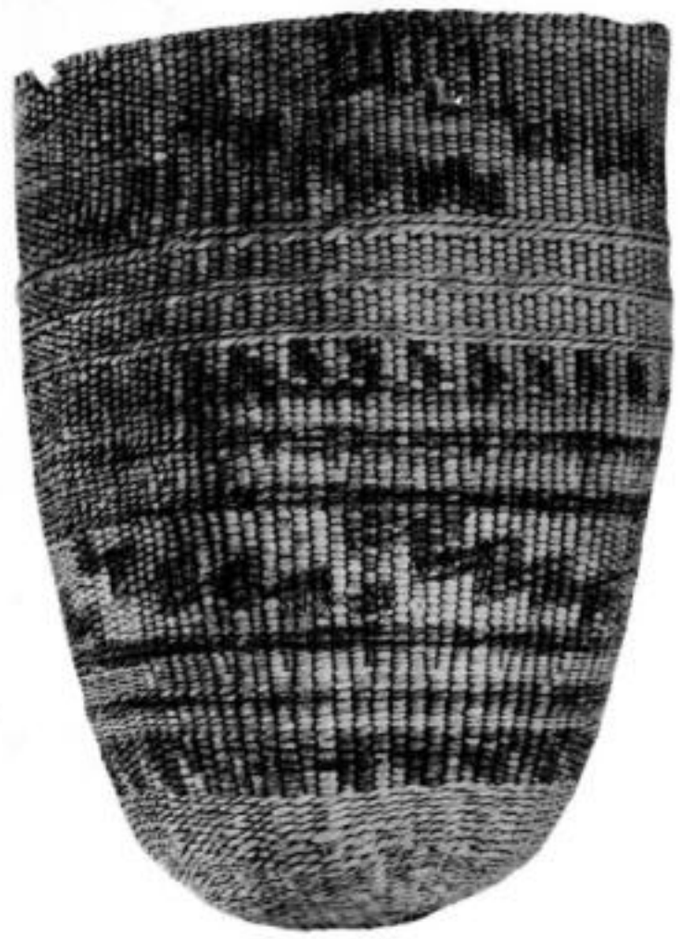
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Cemetery 5.

Pl. 14.



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5a



5b

Cemetery 5.



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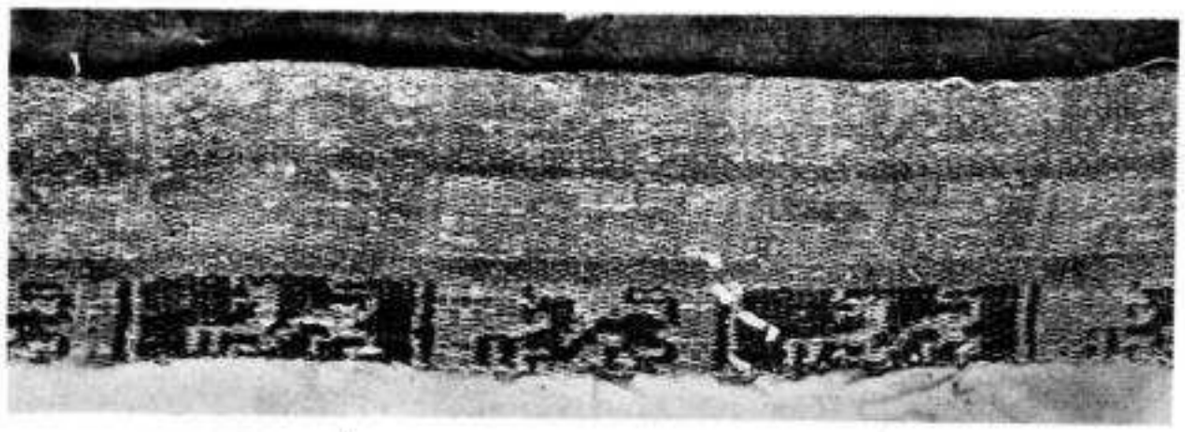
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18

Söget-bulaq, Ying-p'an, Danzil and Lop-nor sites.

Pl. 16.



1



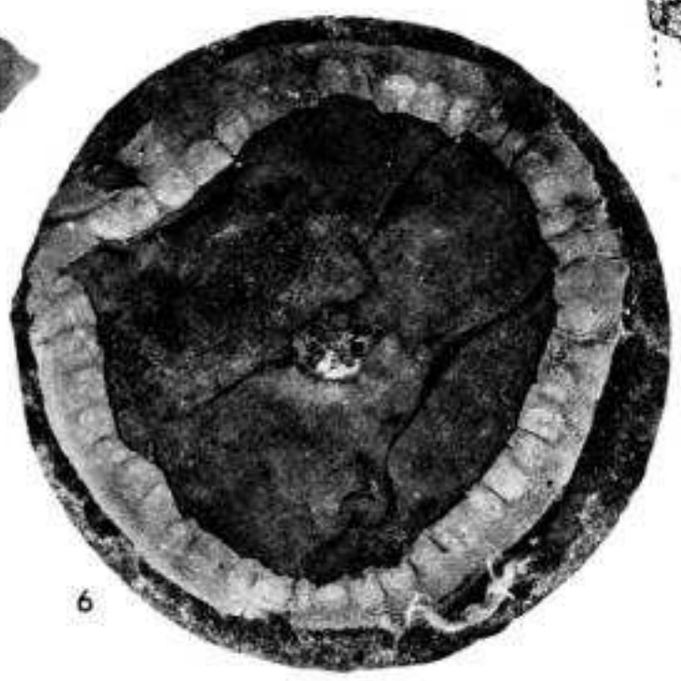
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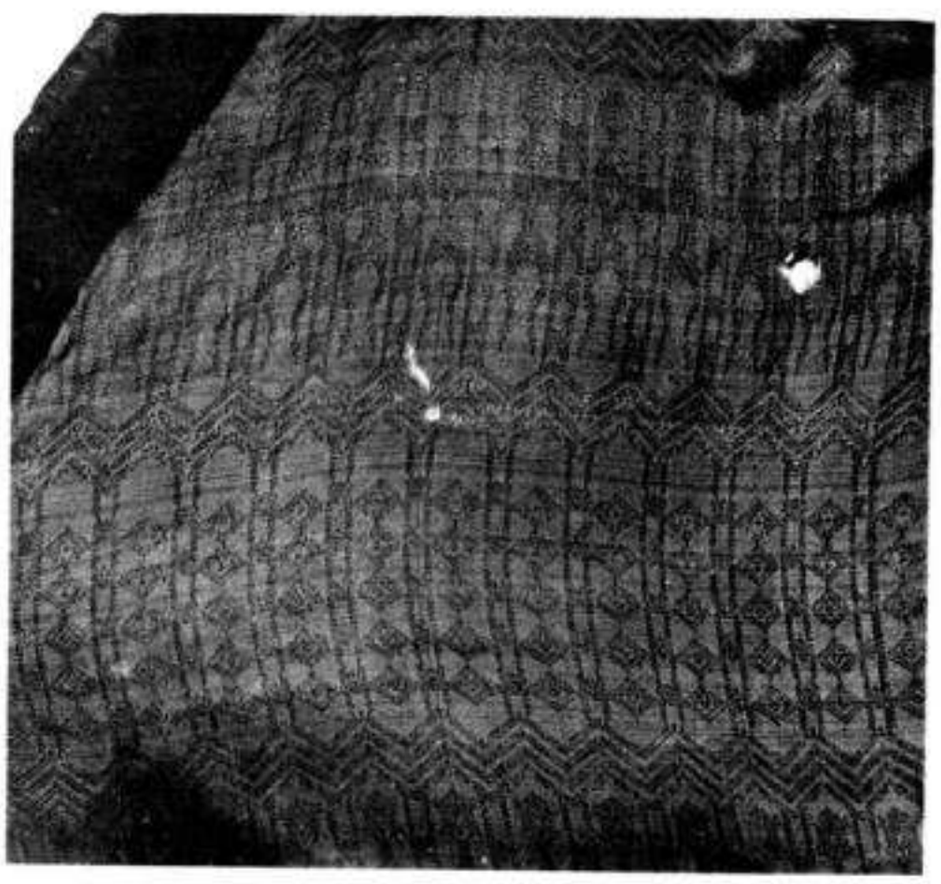
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Grave 6 A and 6 B.



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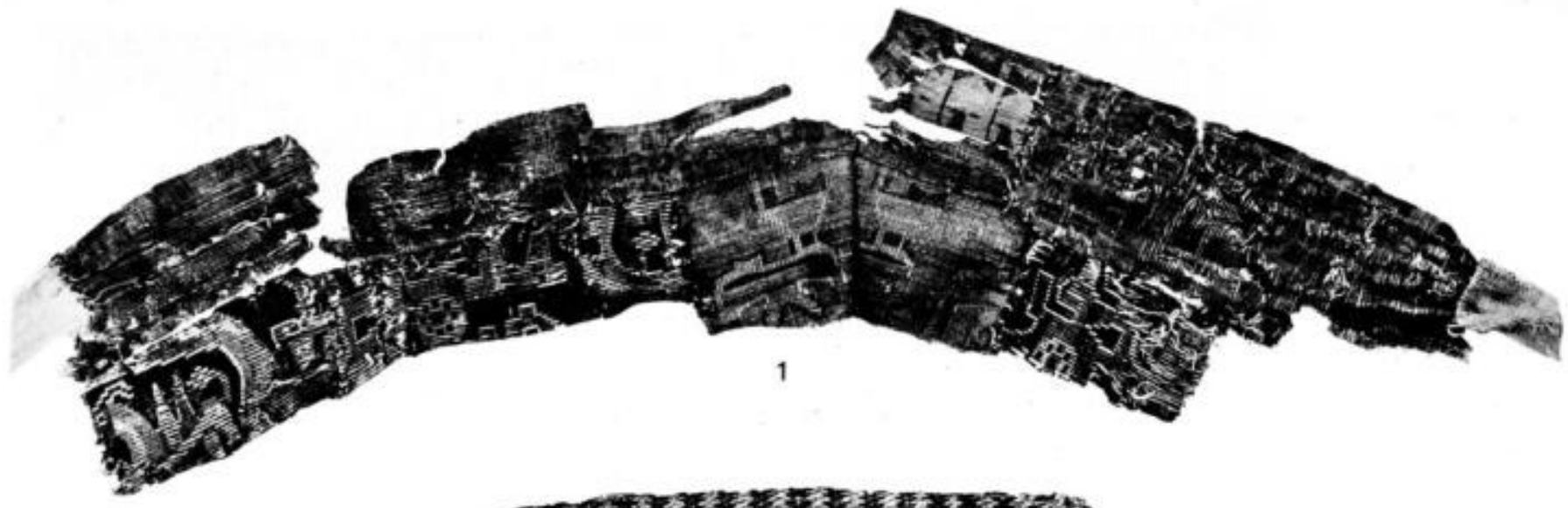
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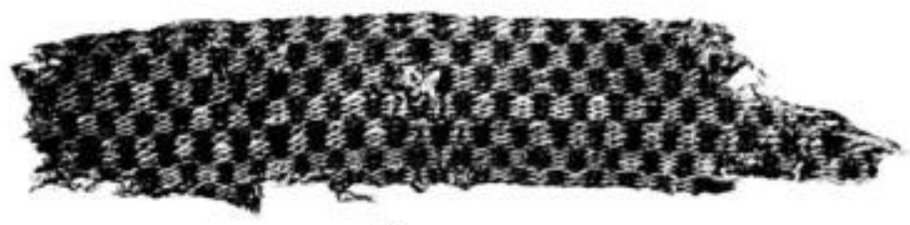
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Grave 6 A.

Pl. 18.



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Various Lop-nor sites.

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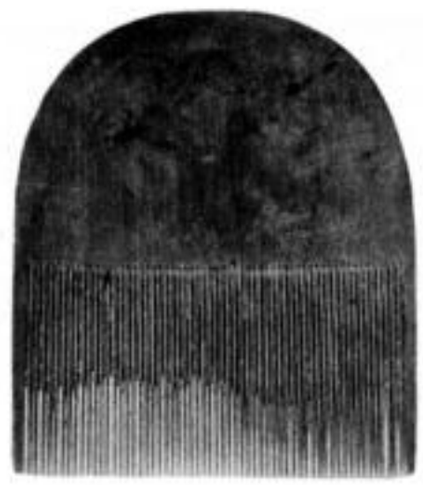
Mass-grave 1.

Pl. 20.



1

2



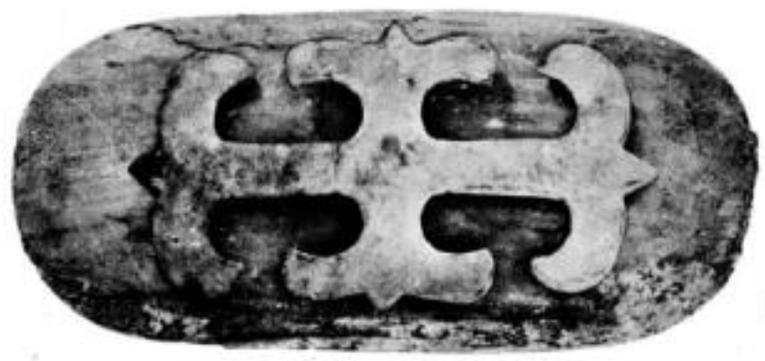
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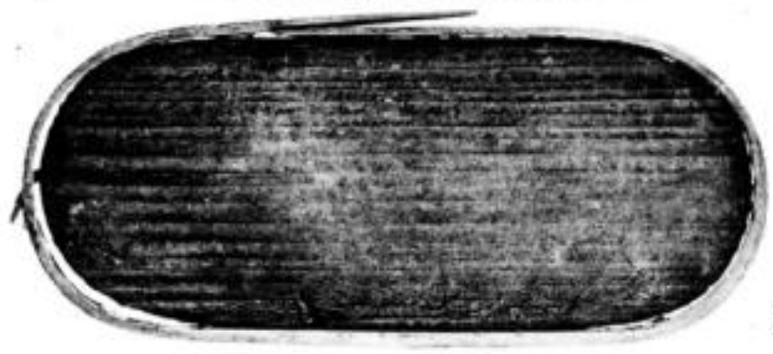
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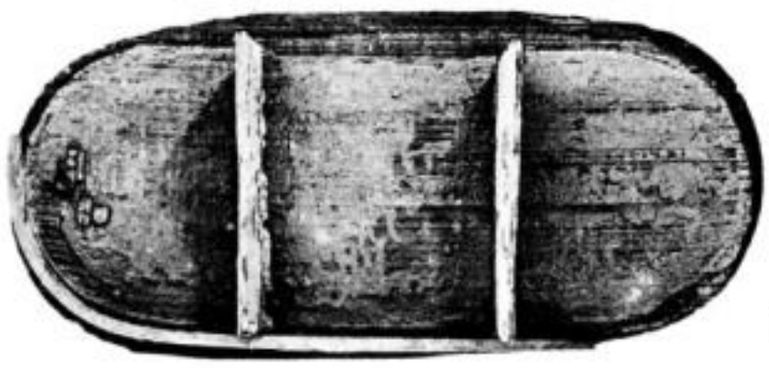
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6a



6b



6c

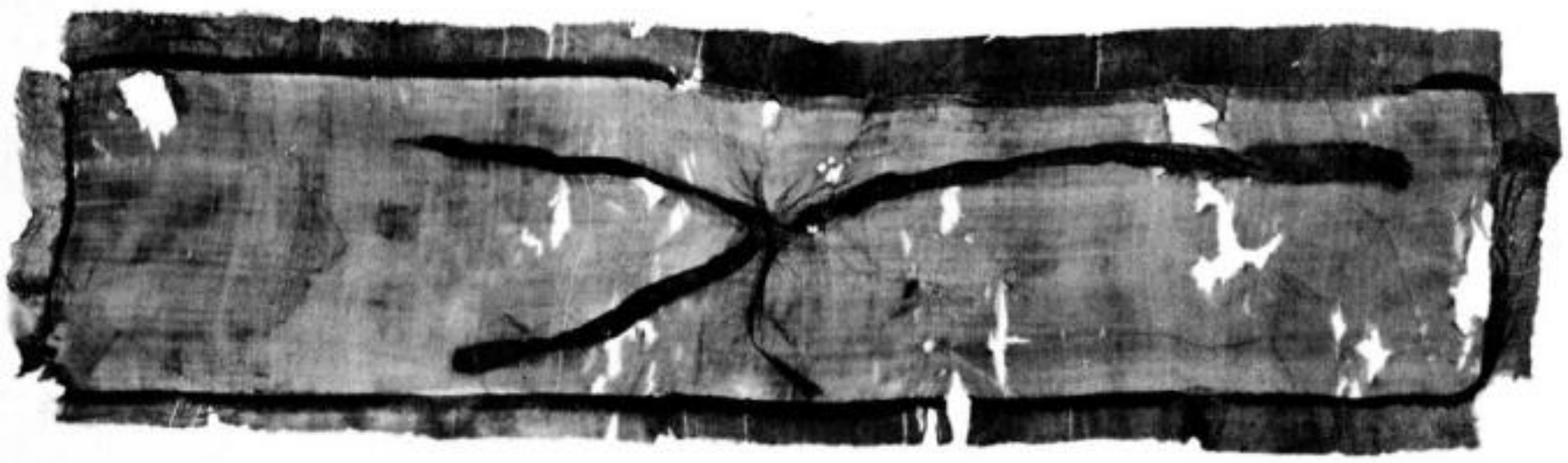


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Mass-grave 1.



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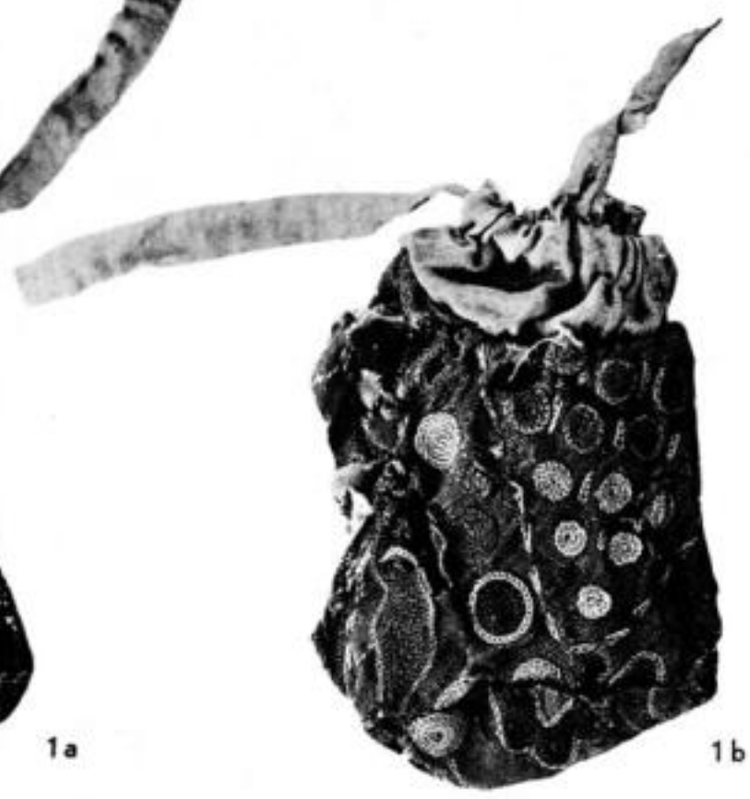
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Mass-Grave 1.

Pl. 22.



1a



1b



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5a



5b

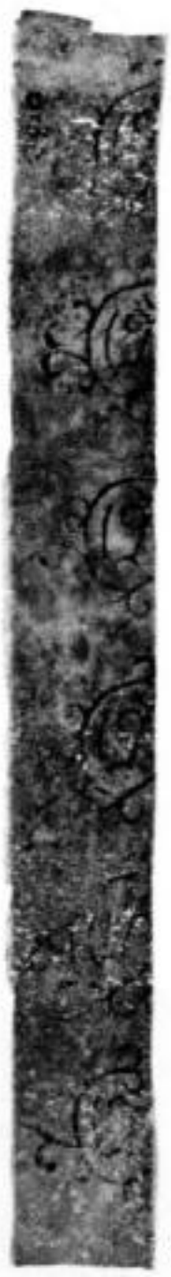
Mass-grave 1 and Grave 35.



1a



1b



2



3a



3b



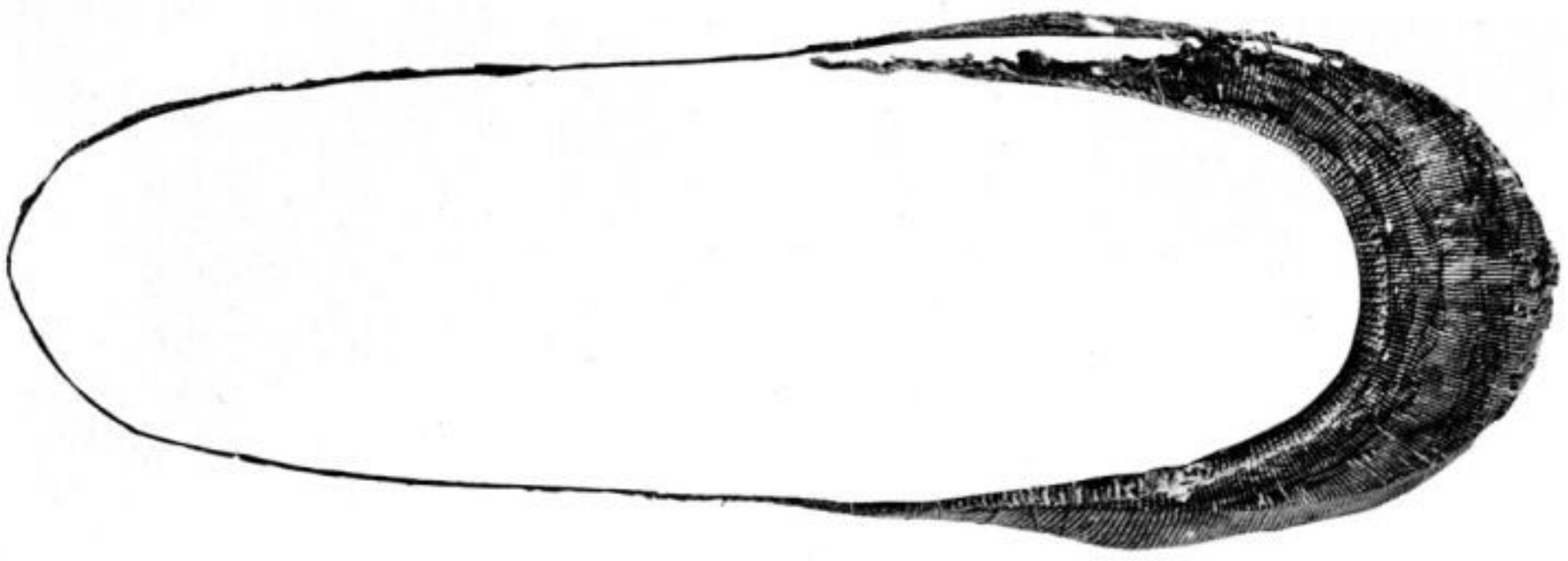
3c



3d

Grave 35, Mass-grave 1 and 2.

Pl. 24.



1



2

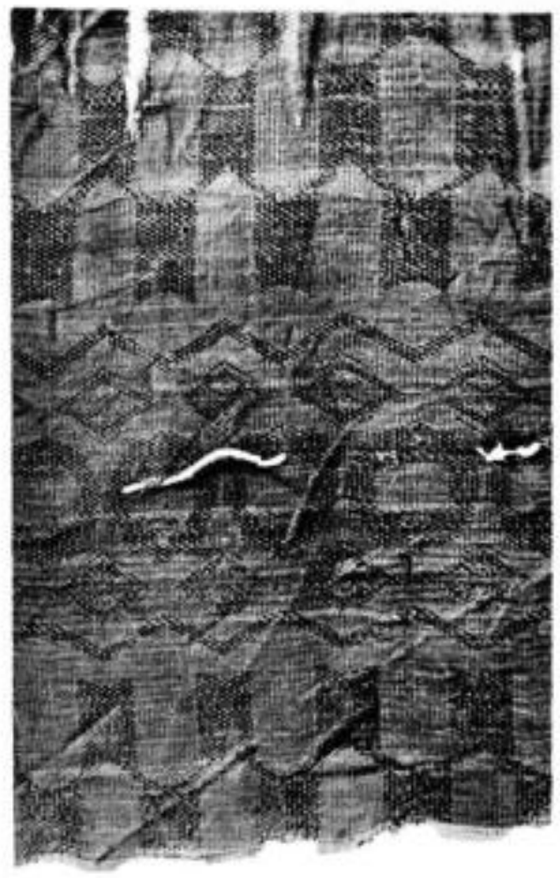
Grave 35.



1



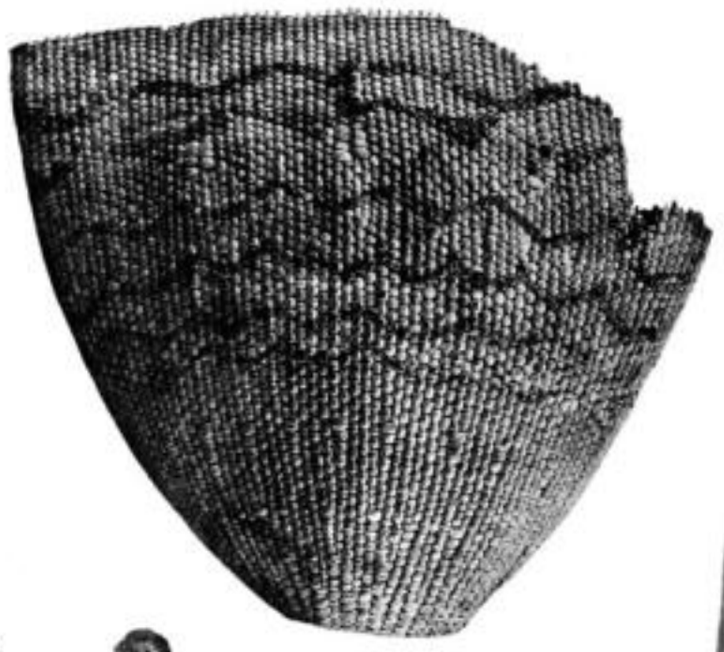
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12

Various Lop-nor sites.

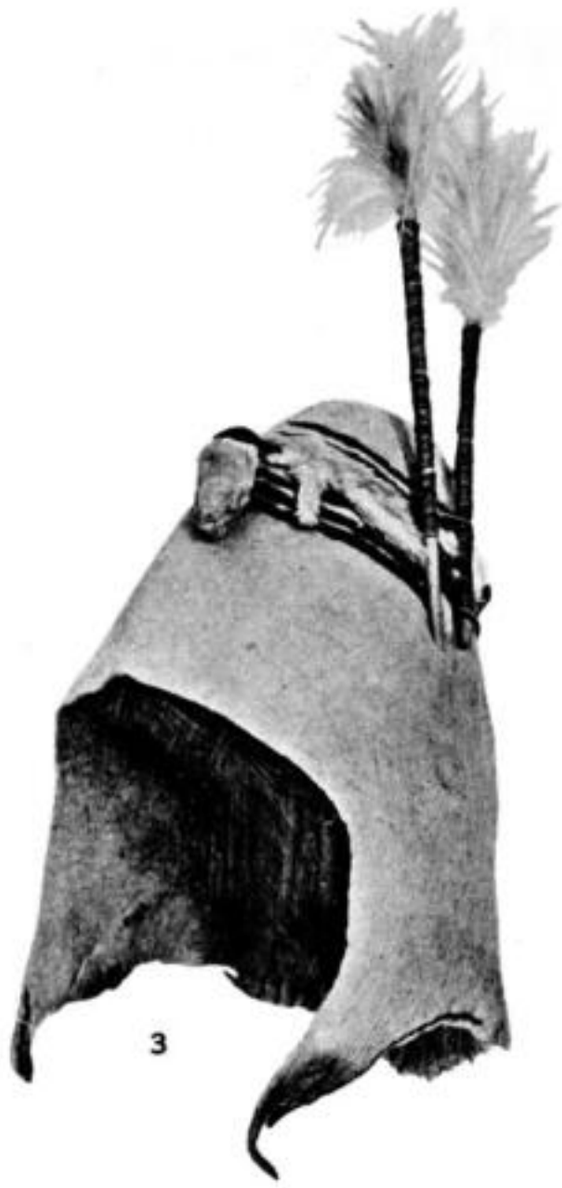
Pl. 26.



1



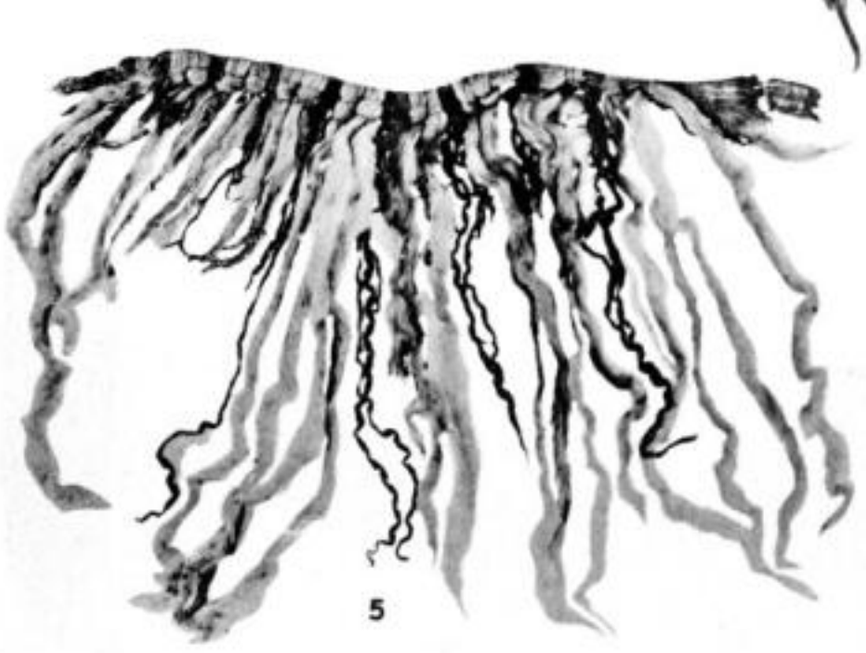
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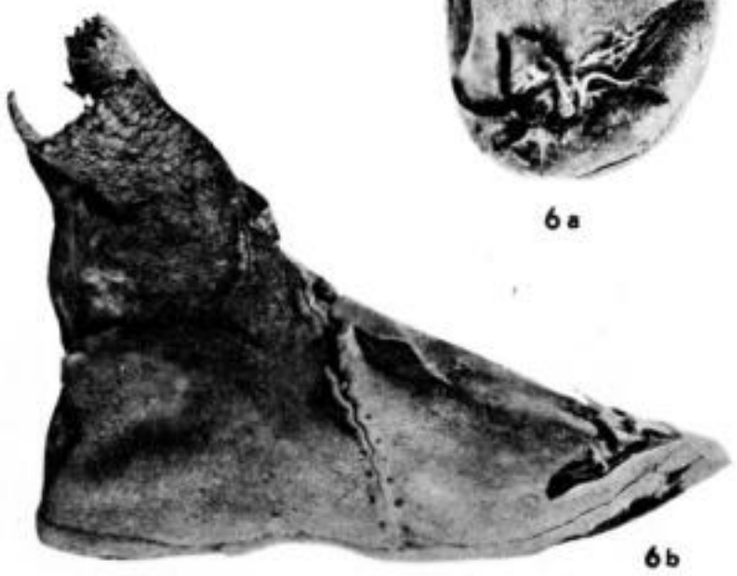
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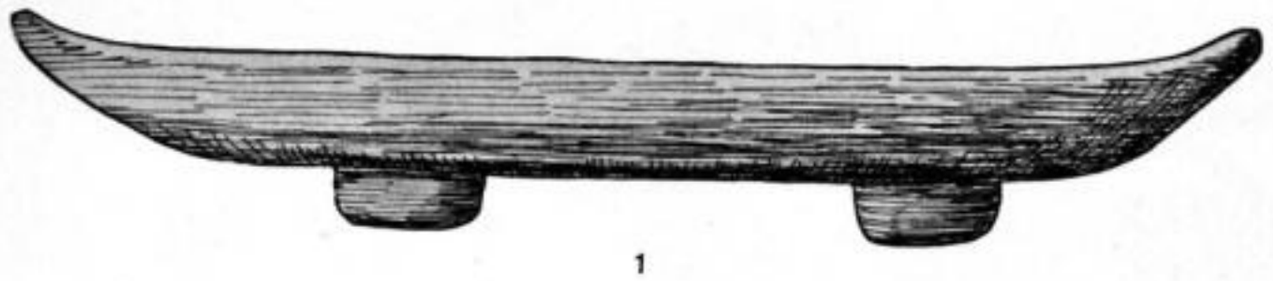


6a



6b

Grave 36.



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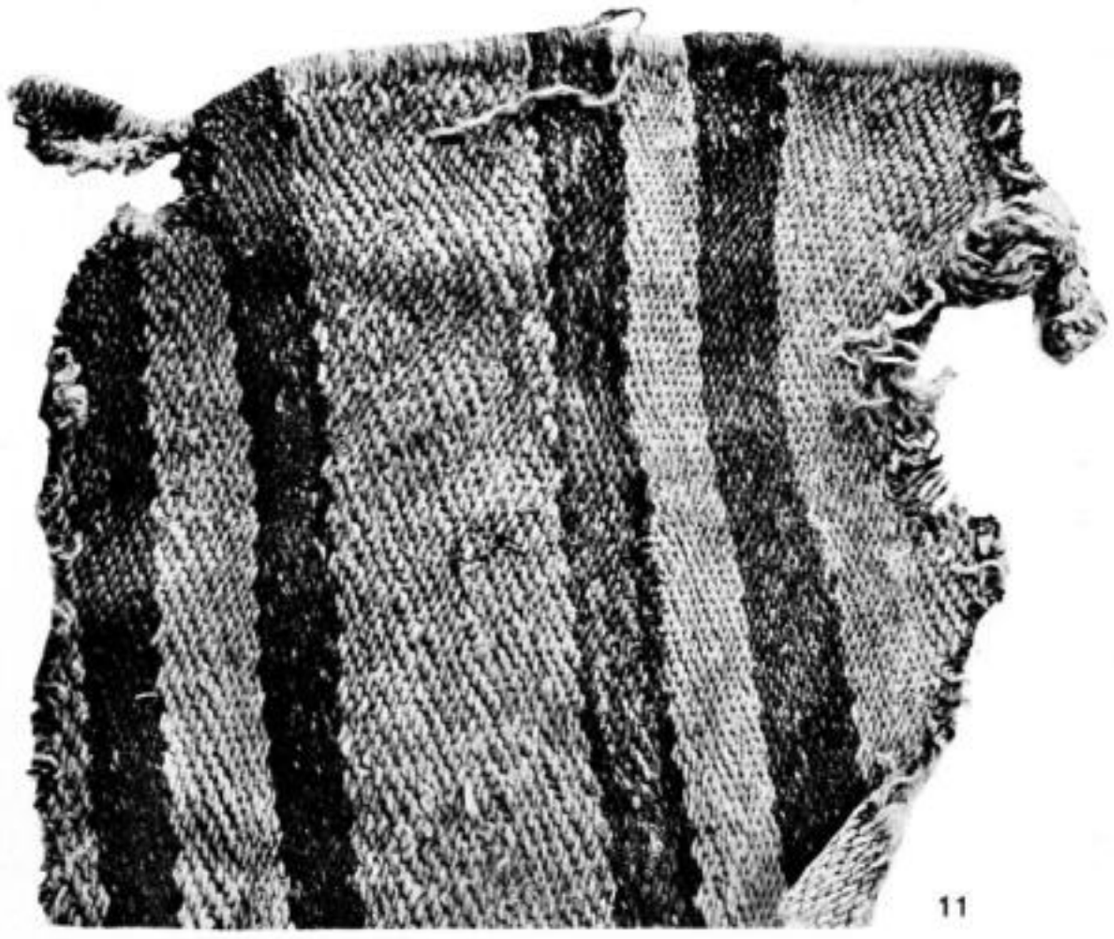
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Various Lop-nor sites.

Pl. 28.



Lou-lan station.



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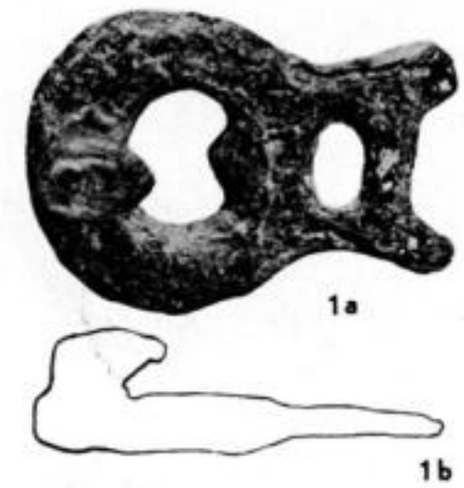
19



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Various Lop-nor sites.

Pl. 30.



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1b



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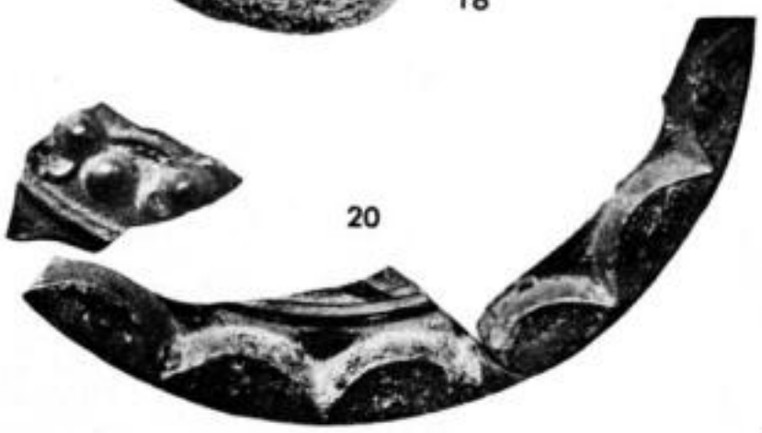
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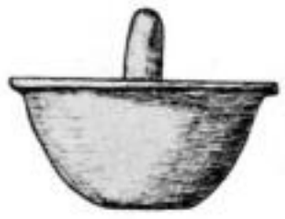
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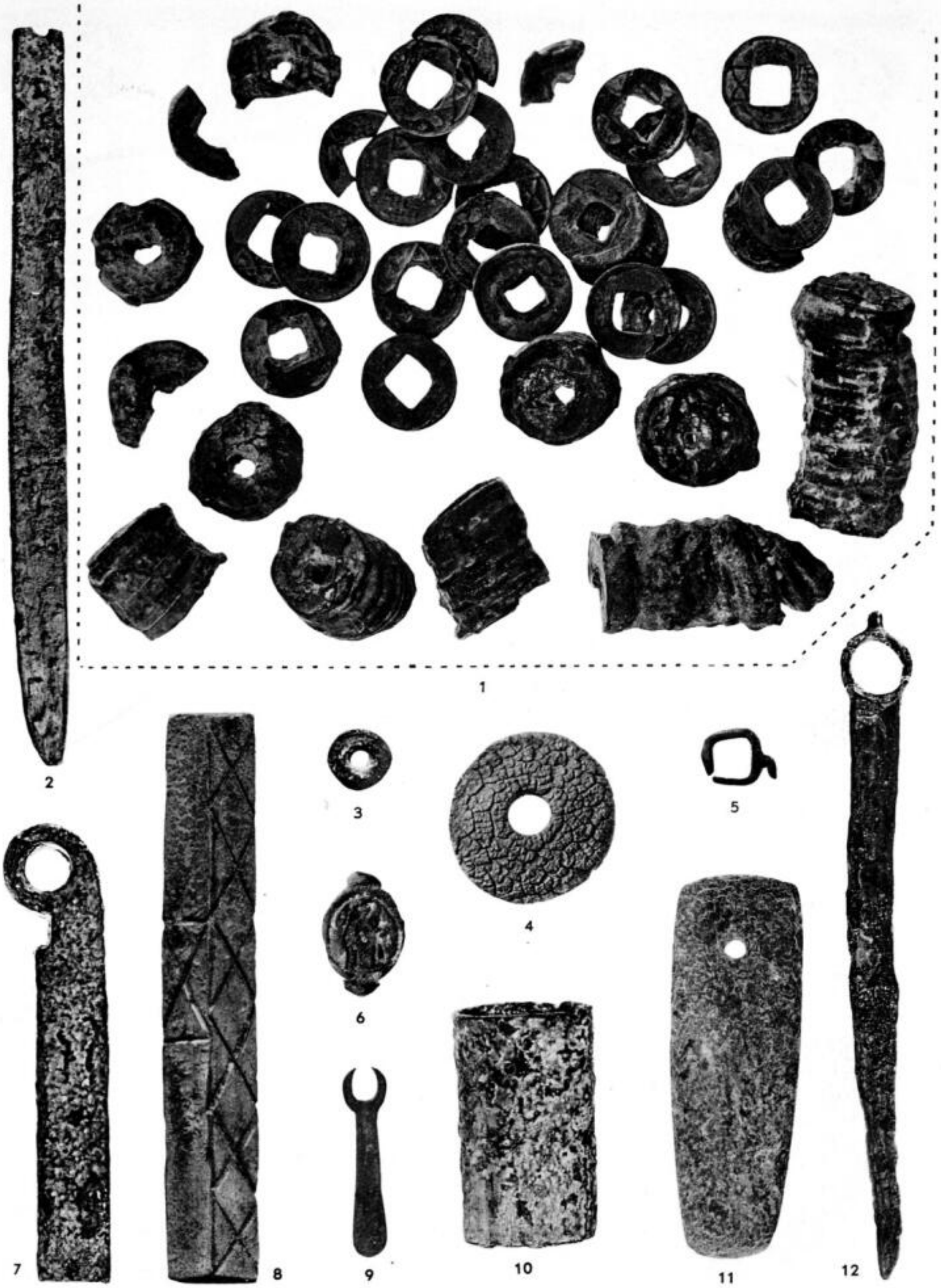


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26

Lop-nor sites.



Lop-nor sites.

Pl. 32.



1a



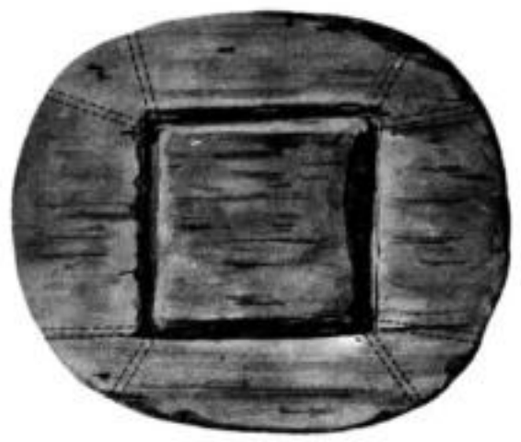
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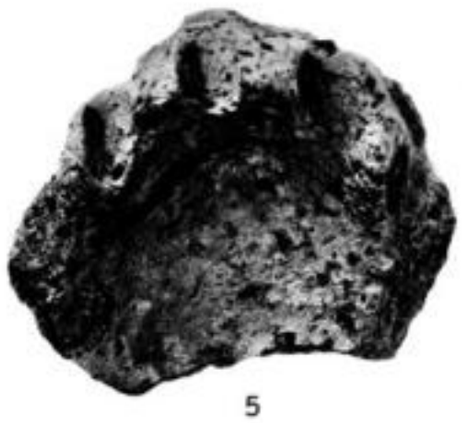
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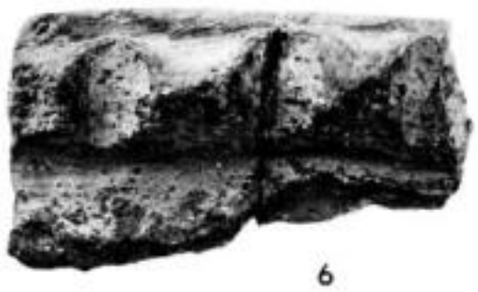
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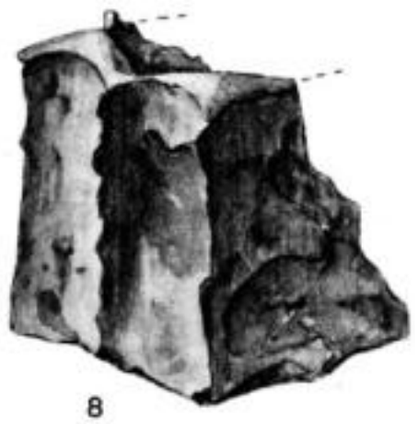
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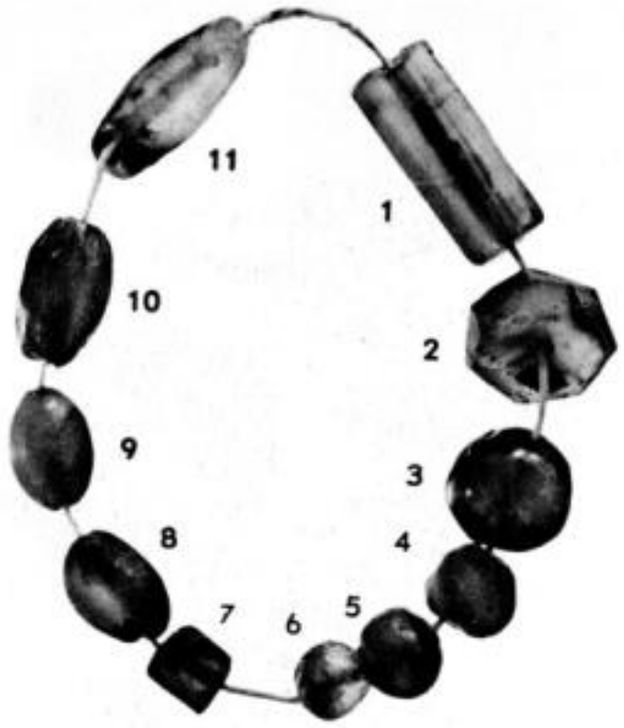
Various Sinkiang sites.

Pl. 33.



Charchan.

Pl. 34.





12



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31 - 35



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Charchan.



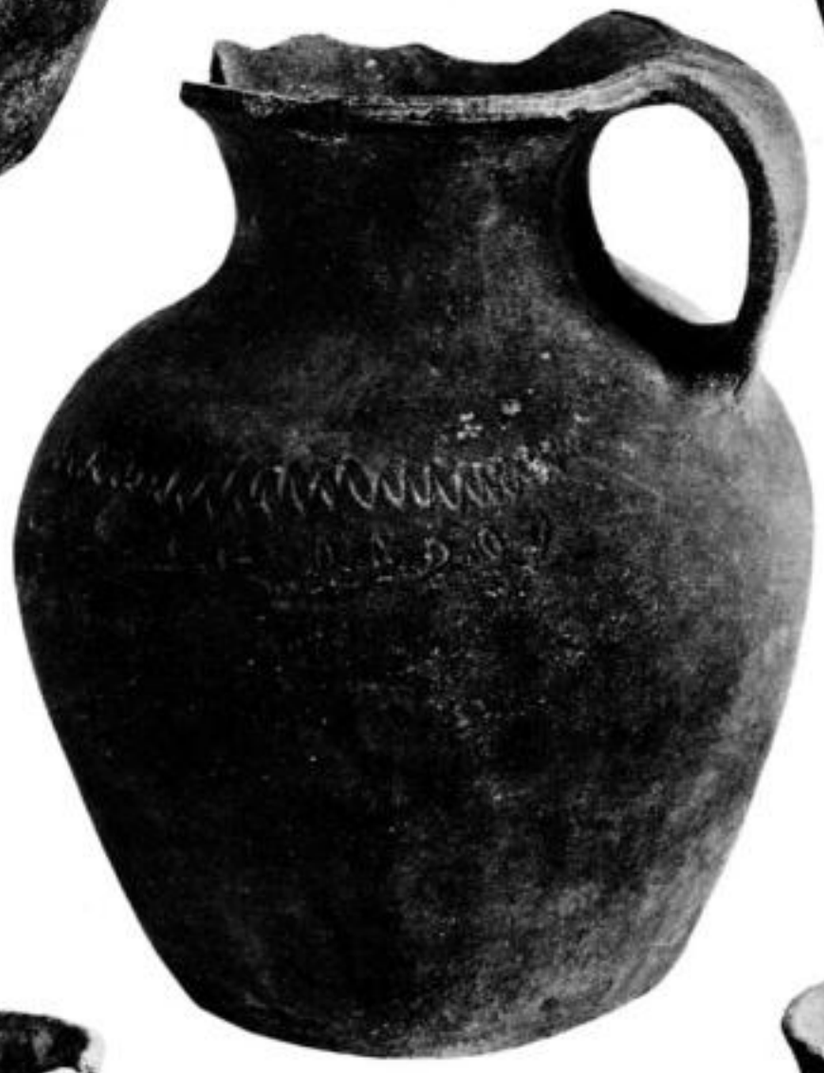
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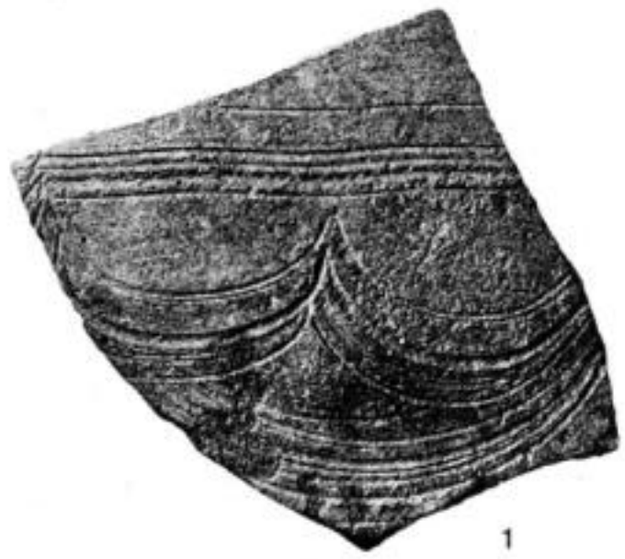
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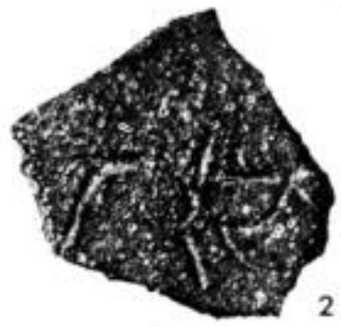
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Charchan.

Pl. 36.



1



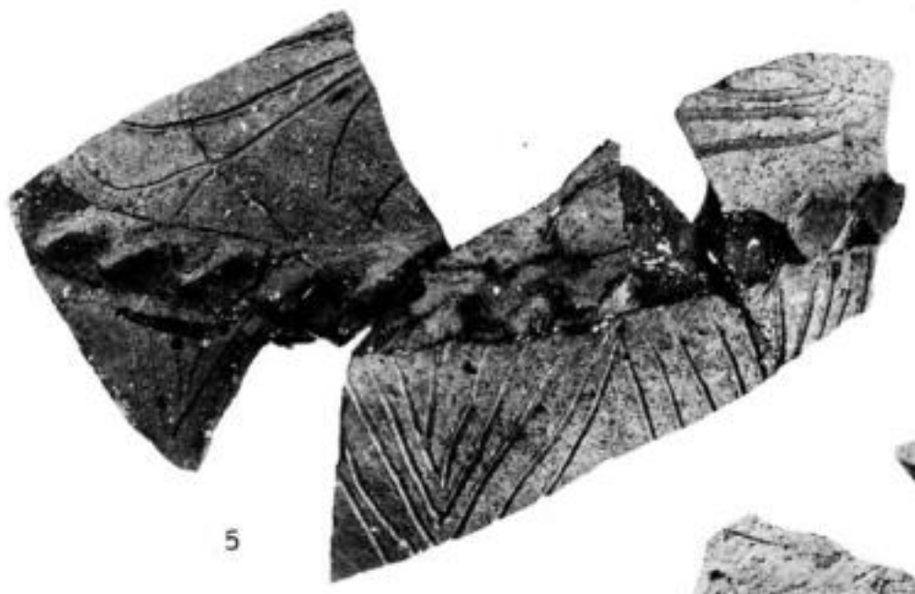
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3



4



5



6



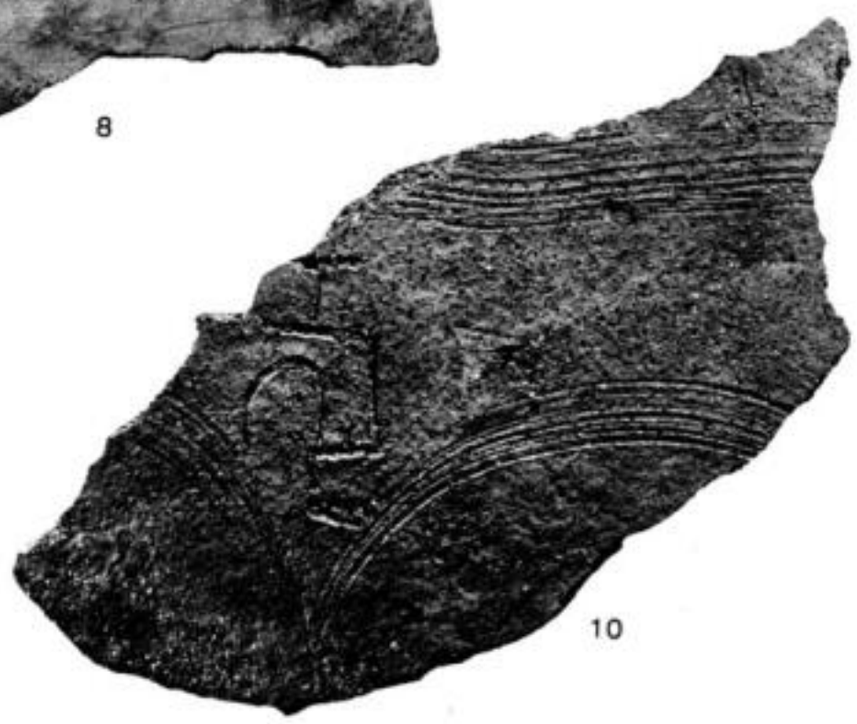
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8



9



10

Charchan and Vash-shahri



1



2



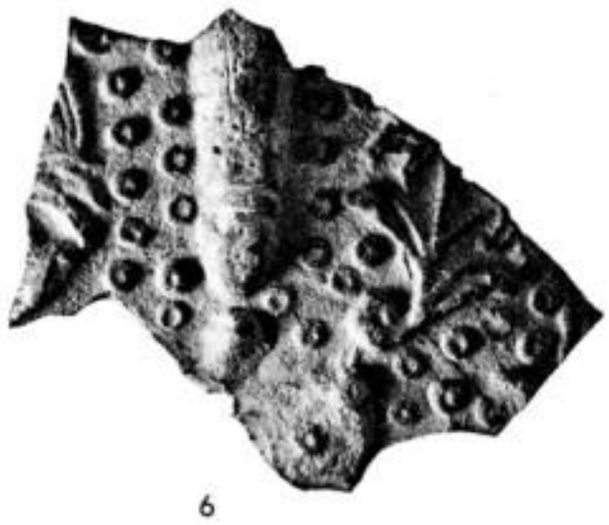
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4



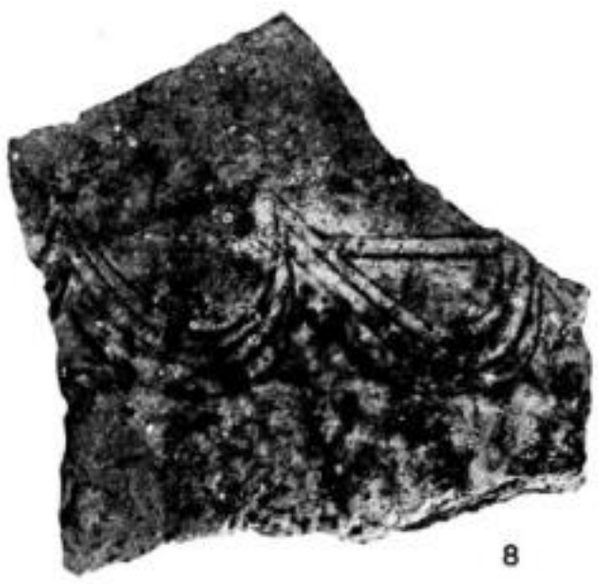
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9



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Charchan, Vash-shahri and Miran.

Pl. 38.



1



2



3



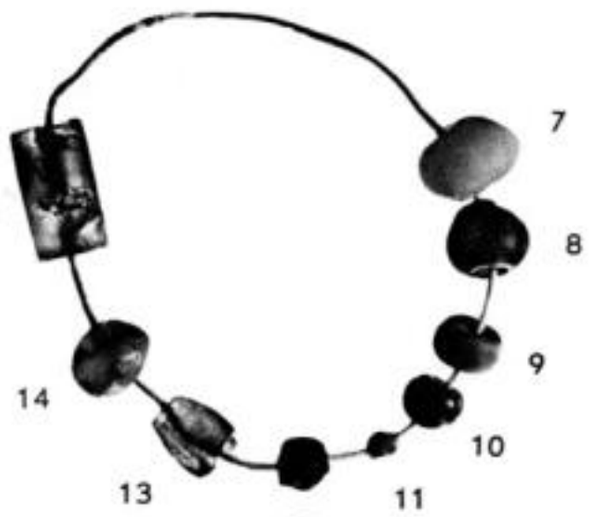
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5



6





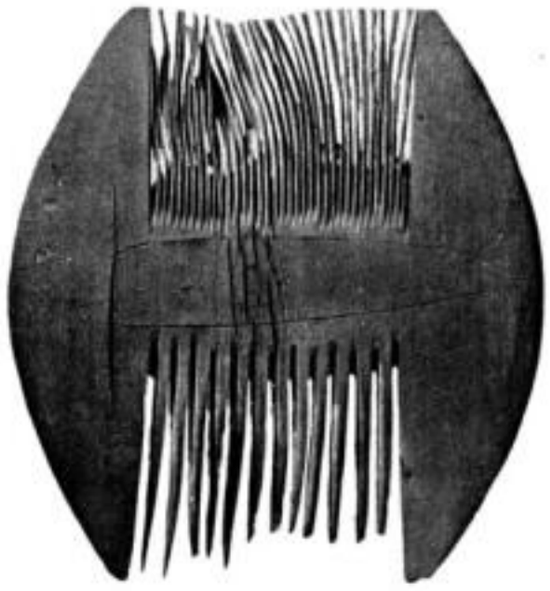
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18



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22

Miran and Vash-shahri.